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CONTENTS

	PAGE
Editorial Notes	561
The Transport Bill	563
The Claims Problem on British Railways	564
Rubber Tyres and Soleplates	564
Letters to the Editor	566
The Scrap Heap	567
Overseas Railway Affairs	568
Confines of Braking—4	570
Norfolk & Western Steam-Turbine-Electric Locomotive	571
Reconditioning of London Transport Class "F" Cars	573
Locomotive Crankpin Quartering Machine	574
Goods Wagons for East Africa	576
Opening out a N.E. Region Tunnel	577
Personal	579

Transport Bill Second Reading

THE Government had a majority of 26 on the Second Reading of the Transport Bill in the House of Commons last Monday and Tuesday. As was to be expected, the debate attracted lively discussion and points were raised by members on many clauses of the Bill. A summary of the proceedings is given elsewhere in this issue and next week we propose to give a detailed study of the principal points made. On page 563 this week we deal with some of the problems of organisation which must arise in decentralising the railways. The Minister of Transport, who moved the Second Reading, handsomely acknowledged the value of the contribution which railway directors in the past had made to the industry. He agreed with a point which has been stressed on more than one occasion in our columns, that one of the more absurd and short-sighted acts of the Labour administration was the destruction of all the influence and guidance which could be given by the railway boards to the railway administration. He also stressed the regret felt throughout the railway service that in the Chief Regional Officer the General Manager of former times had lost a great deal of his status and that the duality of control which the functional system had brought about had led to an undue dependence on an unduly large headquarters staff. The bias in future should be in favour of the widest measure

of regional railway responsibility. He added that he had not yet met a railwayman of any grade who did not lament the disappearance of many of the features of his own line which had given him a focus for his personal interest and loyalty. He emphasised that it would fall to the Government, in concert with the British Transport Commission, to produce a framework based on agreed principles which would enable a detailed scheme for railway decentralisation to be worked out. This scheme would be prepared by railwaymen, but the Minister emphasised that the Government would lay down certain fundamental criteria and a framework embodying the principles it felt should apply.

Unity Needed to Meet Competition

SIR EUSTACE MISSENDEN, formerly General Manager of the Southern Railway, and Chairman of the Railway Executive from 1947-51, this week contributed an article to *The Daily Telegraph* in which he focused attention on an aspect of the Transport Bill which has tended to be obscured in the public mind by the controversy over road haulage denationalisation. He urged that unity of purpose in railway management was essential to meet the competitive conditions foreseen as a result of the proposed repeal of the 25-mile limit. His experience as a member of the wartime Railway Executive Committee leads him to believe that such unity could not be achieved by a form of a general managers' conference. On the formation of British Railways, he had found a new spirit of a single entity with a common purpose, and in many respects he thought the organisation was far more efficient today than it was in the old days. Those misgivings over decentralisation emphasise the necessity for a scheme permitting some operating independence but providing a central authority to lay down common policy. Sir Eustace's concluding remarks will have universal acceptance, namely, that it would be disastrous for the railways and the public if in evolving an organisation too closely linked with pre-war practice, an irresistible invitation were presented to a subsequent Government to overthrow it again.

Freight Charges Increase Approved

FOLLOWING the application for an increase in freight rates reported in our November 7 issue, the Minister of Transport, Mr. Alan Lennox-Boyd, announced on Tuesday that he had authorised an increase of 5 per cent in the railway freight, canal, and dock charges of the British Transport Commission as from December 1. The permanent members of the Transport Tribunal have found that unless charges are increased, the Commission would incur a deficit of between £20 million and £22 million in a full year, and have advised immediate measures to provide additional revenue of this order. A 5 per cent increase in charges, producing an additional £12 million a year, was regarded as the minimum contribution which could be required from railway, freight, and canal services. Another £2,500,000 would be produced by a 5 per cent increase in road haulage rates which the Commission is empowered to make and proposes to bring into effect at the same time. The consultative committee gave no opinion as to a contribution from higher passenger fares, but the B.T.C. memorandum states that this question will be brought under review. Already a cheap 8-day return by air between London and Glasgow or Edinburgh costs less than first class rail, a fact of which much is likely to be heard if further railway increases are in question.

Operational Research and Statistics

METHODS of preventing management from being overwhelmed by a mass of figures, while still having necessary information at its disposal, were explained by Mr. F. A. A. Menzler, Chief Development & Research Officer, London Transport Executive, in a paper on "Operational Research and Statistical Methods in Industry" which he read to the Institute of Transport in London on November 17. The procedure he suggested was scien-

tific sampling, which he likened to quality control in industrial production. It was based on interpretation of numerical data in which the numbers were both absolutely and relatively small; and was intended to meet the increasing demand for explanation of trends revealed by totals and averages, without the expensive collection of highly detailed statistics. Mr. Menzler acknowledged that some critics were sceptical of the sampling method, but he was able to point to the great development in the past quarter of a century in the mathematics and practice of statistical methods derived from the theory of probability. In present circumstances it will be generally agreed that practical demonstration of the efficiency of such methods may be valuable in avoiding waste of time and money due to what Mr. Menzler described as "the fetish that every item must always be observed and counted."

Research Without a Laboratory

WHERE direct numerical data bearing on a transport problem cannot be obtained, Mr. Menzler showed that the method of operational research must be used. This is research without the controlled conditions of the laboratory, and again must have an element of sampling because of the number and complexity of the factors involved. Methods may include the "Gallup Poll" technique as well as observation and timing. The author recorded how questioning of bus travellers had revealed a greater reliance on word-of-mouth information than on notices, maps, or posters; and how time study had settled the question of whether a central pillar in a tube car entrance obstructed the flow of passengers or assisted it by enforcing division into two streams. The conclusion from the latter investigation was that the pillar was on balance a hindrance. Other valuable information on station working has been amassed by research teams working under the aegis of the London Transport Research & Development Committee.

Overseas Railways Reviewed

THE many activities of overseas railways within the British Commonwealth and of British-owned systems and those with a strong British influence in some other countries are described in our current annual review *Overseas Railways 1952*, of which a notice appears on another page. The articles by senior officers on their several systems show not only the progress to date in matters such as dieselisation, C.T.C., and construction of marshalling yards and new lines, but also the projects, many involving heavy expenditure, already started or about to be started despite the ever-increasing costs of labour and materials. Most have been necessitated by the increasing demands made on transport by development of economic resources, typified by the manifold progress and plans of the railways in East and Central Africa; they are necessarily long-term, and the very magnitude of some precludes completion for several years. It is clear from these authoritative sources that the railways discussed will continue to demand rolling stock—including many of them steam as well as diesel and electric motive power—for many years to come. The position arising out of the reorganisation into six systems of the railways of the Dominion of India, where the centenary of railway operation shortly is to be celebrated, is described in detail.

The Rock Island's Second Century

WHEN the locomotive *Rocket* of the Chicago & Rock Island Railroad opened the company's regular passenger services with a journey from Chicago to Joliet on October 10, 1852, it provided the inspiration for a series of named expresses on the present Chicago, Rock Island & Pacific Railroad, the first of which in 1937 marked a turning point in the company's passenger business and reputation. Today, at the beginning of its second century, the Rock Island has almost completed a massive programme of re-equipment and finds itself in a much improved financial position under the reorganised company which took

control on January 1, 1948, with Mr. J. D. Farrington as President. An issue of the *Railway Age* has been devoted to placing on record in articles and pictures the strides that have been made in recent years. By last March the railway had turned all its scheduled passenger services over to diesel haulage, and has built up valuable experience in the intensive working of diesel-electric units.

C.I.E. Diesel Trains

BY using short diesel trains Coras Iompair Eireann hopes to provide a more frequent and comfortable service, with more economical running. Long-distance steam-hauled trains have to stop at present at many intermediate stations for only a few passengers, but, in general, the number of through passengers does not justify non-stop trains. Mr. R. D. McElheron, Assistant Public Relations Officer, C.I.E., in a recent address said that the Board was spending £1,000,000 on new diesel railcars. It was unlikely, he thought, that the Republic, with 3,000,000 inhabitants, could ever afford the speed, frequency, and luxury of transport that could be justified in densely populated, highly industrialised countries. Four cars of an order for 60 placed with A.C.V. Sales Limited are in service, and another 12 are awaiting shipment. Delivery and placing in service of the remainder have been held up by the C.I.E. electricians' strike, which now, as recorded elsewhere in this issue, has been settled. The system has fewer than 15,500 vehicles competing against 130,000 private cars and lorries to meet domestic passenger and freight transport needs, plus the tourist traffic during the holiday season.

Coal Trains of 12,950 Tons

THE remarkable scale of modern United States freight operation is well illustrated by recent tests which have permitted an increase by the Norfolk & Western Railway from 13,000 to 14,500 tons (11,600 to 12,950 tons of 2,240 lb.) in the gross tonnage of loaded coal trains between Williamson, West Virginia, and Portsmouth, Ohio, and to 175 in the number of empty bogie coal wagons per train in the reverse direction. The section concerned is practically level, and the tests have been made to decide whether, with auxiliary tenders to augment the water supply, an intermediate stop at Prichard to take water could be avoided, and the 112 miles run non-stop. An old tender was converted to make available 16,000 gal. of water additional to the 22,000 gal. carried in the 12-wheel tender of the articulated locomotives used on this service. As a result of cutting out the water stop, 14 per cent was saved on the overall journey time, which was brought down to 3 hr. 49 min. for the 112 miles, and the gross ton-miles per train-hr. handled increased by 31 per cent westbound and 10 per cent eastbound. The time economy on the run is sufficiently important to justify the conversion of further old tenders to auxiliary water tanks, so that the whole service may be run non-stop.

Modern Railway Signalling

METHODS of transmitting signal indications from the lineside to the cab have been the subject of widespread discussion in recent weeks, some of it without a sound backing of railway knowledge. A paper on "Modern Railway Signalling" read recently to the Southern Region Lecture & Debating Society by Mr. L. J. Boucher, Signal & Telecommunications Engineer, Southern Region, reviewed the subject in general and recalled the suggestions made from time to time that radar would be a complete answer to all railway safety problems. He assured his hearers that this science, together with "invisible eyes," infra-red rays, and other apparatus in the same field had been considered in connection with railway signalling, but for various reasons were not suitable for railway conditions, excellent as they were in other spheres. Mr. Boucher also recalled an experiment in this country with coded track circuits applied to cab signalling.

The Transport Bill

WE referred last week to the vagueness of the clauses of the Transport Bill on railway organisation and to the possibility that it is the Government's intention to re-establish the railway companies much as they were previous to nationalisation. If this were the case, there would certainly be a separate company for Scotland, the boards of directors would no doubt be revived, and there would presumably also be a part-time body something like the old Railway Companies Association though under a new name and with statutory authority, e.g., a new form of British Transport Commission. The question is, would an organisation on these lines, with the "square deal plus" on charges and conditions of carriage, enable the railways successfully to meet free road competition and, in doing so, provide for passengers and traders a really efficient service at a reasonable price and at the same time enable the railways to pay their way?

The railways are to remain nationalised, that we know, and therefore the ultimate financial responsibility of the State will continue. We imagine it will be generally agreed that Exchequer subsidies are to be avoided and that the railways must meet their obligations on the Transport Stock, finance their own capital investment programmes and cover the cost of providing their services from the charges to be levied on the business they can secure in free competition. Even if the capital obligations could be allocated on any reasonable basis to five or six new railway companies, there would still remain the problem of meeting deficiencies on one or more of the railway companies out of profits on others. The whole of the finances of the five or six railway companies would have to be merged for the purpose of meeting the interest charge. It would not be possible to place fairly on the shoulders of each of the companies the liability to pay their way, and, indeed, the present Transport Bill recognises this when it places finance directly under the reconstituted Commission.

The White Paper and all subsequent pronouncements make it clear the intention is financial unity. It is a logical deduction from this that if five or six separate companies were established, they would be operating units only and not complete commercial entities. In that event a central authority would have to lay down common policy. There could not be, for example, one company working on the normal depreciation system of accounting and another on the replacement cost basis for renewals.

This pre-supposes that the part-time Railway Companies Association (under whatever new name it is given) would require a full-time staff of its own, presumably working under the direction of the full-time Chairman of the Association. This staff would have to deal with finance, charges, and capital expenditure on new works, and as these affect all the work of a railway undertaking to some extent, the central direction under the authority would in fact become a body which would largely govern or control the actions of the separate railway companies on general policy. Who would be in charge of it from day to day? The full-time Chairman of the top board of directors? Surely not; this would not be his function. Nor is it likely from experience that the other directors (i.e., the Chairmen of the railway companies) would agree to what was done even if it were. Consider, for instance, the allocation of capital investment between the companies and the priorities that would have to be accorded to particular new projects. What voluntary agreement would be likely on this, particularly bearing in mind that each would be expected to earn a certain proportion of the central charges and that some may have deficiencies? Under the Railway Companies Association each of the company chairmen was a member, and each was specially concerned with the special interests of his particular company. Common policy was only settled by agreement, and when an issue arose, such as post-war policy in the '40s, the Association was split in three parts as the interests of the companies differed. The Association never had to finance the railway companies; its real purpose was not to

act as a combined board of directors for dealing with the domestic policy of the constituent companies, but to speak in public for the railway industry where there was agreement on common policy. That is very different from what apparently is now being considered.

Then consider the arrangement at the management level. Apart from the complication of the central control of finance, charges, new works, etc., the General Managers of the separate companies would be able to reach agreement only on those matters where the separate interests of the companies did not impinge. It has been suggested that a revival of the wartime Railway Executive Committee, on which the General Managers served, would meet adequately the present requirements. Anyone who watched closely the working of that committee will know that the real power and action remained with the separate companies and that the policy of the members of the R.E.C. was to deal only with those wartime matters which were essential for collective action in the prosecution of the war effort. The vast bulk of the company business was separate, distinct, and individual. How could it be otherwise in the future if inter-company rivalry were to be restored?

There never could have been agreement on railway methods and equipment. On the few occasions when this was tried it failed completely. For years the former companies tried to settle a simple thing like a standard brake van to run anywhere on the railways. They could not do so and each company retained its own type. It was settled in a matter of days after 1948. Even the common user of wagons was restricted; and although traffic receipts were pooled, the goods often moved by the company routes and not the direct ones. These are just random examples.

As the overall cost of railway transport is the governing factor in success or failure, and as financial unity is a condition precedent, it is apparent no such method as has been outlined would do what is required. Between 1923 and 1938 the four groups had to fight for their existence against free road competition. They were largely able to do this by reductions in working expenditure which by 1938 amounted to £23 millions a year. These reductions were secured by the rationalisation process within each of the groups, which began in 1923 and was not completed until the late 1930s. Even with reductions of expenditure of this order, everyone will agree that the railways had a very hard time between the wars, when 70 per cent of the receipts (including L.P.T.B.) were already pooled.

Indeed, there was a period when the L.N.E.R. had to go off the replacement cost basis for renewals, because the money simply was not there. During and after the war, when the group companies were considering their post-war position and nationalisation was not then decided, there was grave concern on the part of at least some of the companies over the prospects. Even the groups themselves were seriously considering unification under private ownership, and it was only the threat of nationalisation which made it inadvisable to pursue this. At this point it was well known that the L.M.S.R. and L.N.E.R. companies were at variance with the other two groups on what should be done, and the L.N.E.R. went so far as to publish its own proposals which were aimed at a securer financial basis. These facts only need to be recalled to indicate the absolute necessity now of combining all the resources of the railways to secure the maximum reduction of expenditure to give a good service to trade and industry throughout the country and to meet road and coastwise competition. This cannot be done by re-creating separate company interests, simply because the cost would be too great for the railways, industry, and the public to stand in a free competitive system of transport.

We believe—as we stated in our November 7 issue—that the Regions should be renamed "Railways," and that they should be headed by General Managers, to whom all the departmental officers should be solely responsible. But so long as the railways remain a single financial entity they will require a central management unit answerable to one board.

The Claims Problem on British Railways

THE address on the claims problem on British Railways given by Mr. T. E. Jackson, District Goods Superintendent, London Bridge, Southern Region, to the Railway Students' Association on November 12, amplifies the article on claims prevention on the railways of Britain, France, and U.S.A. that appeared in our issues of October 10 and 31. The £3 million paid in 1951 in settlement of over 900,000 claims against British Railways other than for personal injury and coal class traffic represents an increase of 18 per cent over the 1950 figure, and some 56 per cent of it was payment for traffic lost, stolen, or pilfered, an increase of 23 per cent over the preceding year.

From the point of view of the six Regions of British Railways the claims problem is indivisible, with so much traffic originating in, transiting, and terminating in different Regions. From the statistics that the author quotes of the proportion incurred by each Region of the number and amount of claims in relation to total carryings it may, however, be deduced that the mainly industrial Regions have a greater claims potential than the less. The average paid for a claim in 1951 was £3 4s. 4d., though there were some four-figure payments, as for the thefts when thieves raided the parcels office at a London terminus. In one case thieves toured the Midlands in a caravan equipped with maps, and systematically raided vans in sidings and depots.

Seen in proper perspective against the total carryings by British Railways, 115 million tons, excluding coal, in a year, the £3 million claims bill is not as great as it might seem: Not less than 99.93 per cent of packages are delivered in good condition; in May, 1952, only .008 per cent of the total value, £47 million, of tobacco, vulnerable commodity, was stolen. The only sure way of preventing theft of this small proportion would be to convoy all consignments. To protect every single unit of this vast quantity from the point where it leaves senders' premises by railway cartage vehicle right through to delivery is a task "which was not necessary in the days when morals were higher and is impossible in these wicked times, if only from the point of view of manpower alone."

The damage problem, Mr. Jackson points out, should be more tangible as it arises out of mistakes. The marketing of goods today necessitates appeal to the eye in the wrapping or container, so that delivery should be not only without injury, but without blemish. British Railways achieve a very fair measure of success in trying to achieve this aim, with 99.93 per cent of packages arriving in good condition. Manufacturers and traders can help in actual production and in packing and despatch.

In claims prevention the "anticipatory" measures can be divided into diagnosis; technical and physical; and educative and executive. The first of these is based on statistics relating *inter alia* to the 8,000 stations of British Railways; notification of loss under the standard terms of carriage must be made within 28 days from despatch, and that of damage and pilferage within three days of delivery. The technical and physical measures taken against loss include co-operation with the British Transport Police; despite the ingenuity of thieves in overcoming security measures, with the consequent necessity for readjustment, the total claims bill has been cut by 25 per cent since 1948, despite increases in price levels, and claims on goods traffics selected for special attention are two-thirds less than in 1948. In considering measures against damage account must be taken of war damage and arrears of maintenance of shed and van roofs, and so on; also, with other employers, the railways have had difficulty in preserving former standards of recruitment, but improvements in both respects are becoming noticeable. The principal measures taken against damage are: (a) shock absorbing vehicles; (b) improvement of wagon sheets; (c) increased supply of sheet supporter bar wagons; (d) safety loading devices; (e) collaboration with traders in packing, and (f) re-sorting of traffic.

Whilst the problem of claims affects many departments, such as the Civil Engineer's in maintenance of buildings, the Mechanical, as to wagons, British Transport Police, and so on, the Commercial Department is the first to know the facts as to loss and damage and to initiate remedial

conference work both at Regional and at inter-Regional levels, and Commercial Superintendents must ensure their functioning as fully as possible. Thus there are inter-Regional claims prevention conferences, goods and passenger; Regional Headquarters claims prevention committees, goods and passenger; and conferences with District Officers who in turn hold periodical meetings with station-masters and goods agents who in their turn have station-meetings principally through the media of the Local Departmental Committees. Within the Regions there are specialist claims prevention sections at Headquarters with outdoor inspectors working from Headquarters and District offices. At station level some Regions employ station claims prevention foremen or mobile checkers. Besides this there are the educational system and special propaganda efforts including the staff magazines. Claims prevention also occupies an important place in the curricula for over 30 vocational courses attended by many different grades of staff, whilst at the larger training establishments the subject is often brought into the wider sphere of learning. The B.T.C. has its police training college at Tadworth where claims prevention is dealt with in a very exhaustive way. Such far reaching research and exchange of ideas between the Regions, Mr. Jackson points out, cannot be effective without co-operation at all levels—this being especially true in connection with damage and wetting, the remedy for which is largely in the hands of handling, shunting, and cartage staff—and exhortation and example must be taken right down to the man on the job.

Rubber Tyres and Soleplates

RAILWAY travellers are less aware of the contributions made by rubber to quiet and comfortable journeys than users of road transport. Apart from the obvious one of rubber tyres, so far used only on a limited scale, there is the growing but much less evident application of rubber pads under flat-bottom track, of which an example on British Railways, made by the Clyde Rubber Works Co. Ltd., was illustrated in our July 18 issue. Detailed research into the characteristics of rubber soleplates, first undertaken in connection with concrete sleepers, has led the French National Railways to begin installing them widely in wooden sleepers this year, and to aim at extending them, in conjunction with a special design of spring rail clip, to all principal main lines. This development was the subject of a paper read by M. Roger Sonnevile, Director of Permanent Way Research, S.N.C.F., at a conference on Recent French Developments in the Use of Rubber for Railways organised in London last week by the British Rubber Development Board.

This year, said M. Sonnevile, the French National Railways had put down more than 1,500,000 rubber soleplates; in 1953 they would use more than 3,000,000. The soleplates have zigzag grooves on both surfaces. They are 4½ mm. thick, and have an elasticity to compression under normal wheel loads transmitted by the rail, which is slightly greater than that of wooden sleepers. An unsuspected fact emerging from research on the behaviour of rails under load was a sound-frequency vibration in the neighbourhood of 700-800 cycles, with upward and downward accelerations easily exceeding 100 g. The amplitude was about a tenth of a millimetre, which falls well within the elastic movement of the rail permitted by the rubber soleplates. These phenomena made it necessary to find a fixing that would allow slight vertical movements of the rail, but keep the rail firmly in contact with the soleplate throughout. The requirements have been met by adopting the R.N. elastic clip, the effect of which is to allow an upwards elasticity corresponding to that in the downward direction afforded by the grooved rubber soleplate. Another advantage is that the high coefficient of friction of the rubber resists creep, which overcomes a major problem in using long welded rails. The French National Railways are going ahead with an extensive welding programme, and at the end of 1953 will have some 620 miles of welded track.

Other speakers at the conference described rubber-tyre

railway vehicles now in service in France. A model of a bogie for the Paris Metro rubber-tyre motor coach, made by apprentices of the Metro system, was on show, and a paper on this experimental venture was read by Monsieur H. Ruhlmann, Engineer of the Paris Transport System.

The vehicle, described in our December 21, 1951, issue, has been operating in normal passenger service between Porte des Lilas and Pré St. Gervais since April 13 this year. On the basis of its satisfactory performance, said M. Ruhlmann, the Metro is planning to equip one of its other lines to take rolling stock of a similar type. A total economy of 20 per cent is foreseen in the purchase of the cars, because the higher operating speed enables a given service to be provided with 10 per cent fewer vehicles, while the price of each car is 10 per cent below that of a standard car, the latter reduction proceeding from the use of many components manufactured in quantity by the heavy motor industry. Operating speed is higher by about 10 per cent because of increased rates of acceleration and braking, which as a result of experience have been fixed at 5 ft. per sec. per sec., this being the maximum practicable without discomfort to passengers.

The final paper at the conference was read by Mr. W. R. Good, of the Michelin Tyre Co. Ltd., and was accompanied by films showing the development of rubber-tyre railcars and passenger coaches in France up to the present Paris-Strasbourg expresses. Mr. Good spoke from personal experience of the comfort and silence of these trains, and of their popularity with French business travellers. It is an indication of their success with the public that the French National Railways are now operating pneumatic-tyre sets on the Paris-Basle service as well as Paris-Strasbourg. Up to September 30 this year the three six-coach rubber-tyre sets had run 400,000, 370,000 and 330,000 miles respectively. The average tyre mileage of 22,000 taken as a basis in 1949 for estimating costs had been more than doubled. Mr. Good referred also to the Swiss pneumatic-tyre coaches (described in our May 18 and November 16, 1951, issues) and dealt in detail with the Paris Metro rubber-tyre vehicle.

In a discussion at the end of the conference, Mr. A. W. Manser, Chief Mechanical Engineer (Railways), London Transport Executive, said the Paris Metro car was an important step towards lightweight construction. He compared the rate of braking quoted by M. Ruhlmann with the emergency rate on London Transport, which was about 4.4 ft. per sec. per sec. Regarding the figure of 50,000 miles as the average life of a tyre running on rails, Mr. Manser said that on this basis London Transport tyre costs would be more than trebled, and they were a major factor in their maintenance costs. He thought the question centred round the economic aspect because a quieter ride in itself might not attract any more passengers. Mr. Good replied that 50,000 miles had been quoted from experience with tyres running on a normal rail. A much longer life could be expected from tyres running on a special broad track such as was envisaged for the Paris Metro, but a precise figure was not yet available of what it would be.

British Transport Commission Traffic Receipts

REPORTS of a revival of the textile industry seem to be confirmed by the British Railways merchandise and livestock receipts for Period 11, the four weeks ended November 2; at £8,464,000 receipts compare with £8,121,000 for the preceding four weeks, though they exceeded the corresponding figure for 1951 by only 1.6 per cent despite the 10 per cent increase in rates in the past twelve months. The livestock element in these receipts normally is inconsiderable.

The same trend appears in Road Haulage Executive receipts for the period; these at £6,200,000 were £100,000 more than for Period 10, but were still 5.7 per cent below last year's figures. Apart from any question of a recession, British Road Services receipts probably are being affected by "C" licence carriage, which also but to

a lesser extent perhaps is affecting railway merchandise traffic.

Increases in coal output are reflected in British Railways coal and coke traffics, which were £8,277,000 for the period, compared with £7,995,000 for Period 10; nevertheless the fact that receipts continued to be less than 10 per cent over those for the corresponding four weeks of 1951 shows that even with increased coal output and therefore an increase in tons originating, ton-mileage did not correspondingly increase, presumably because shorter rail hauls of coal have become a more or less permanent feature. The recent rise in steel production is seen in railway mineral traffics, £3,470,000 for Period 11 compared with £3,264,000 for Period 10, and 8.4 per cent above the corresponding figure for last year.

	Four weeks to November 2		Incr. or decr.	Aggregate for 44 weeks		Incr. or decr.
	1952	1951		1952	1951	
—	£000	£000	£000	£000	£000	£000
British Railways—						
Passengers ...	7,119	6,832	+ 287	95,099	92,626	+ 2,473
Parcels, etc., by passenger train ...	2,833	2,575	+ 258	30,043	27,849	+ 2,194
Merchandise & livestock ...	8,464	8,327	+ 137	87,833	83,486	+ 4,347
Minerals ...	3,470	3,201	+ 269	35,105	30,409	+ 4,696
Coal & coke ...	8,277	7,537	+ 740	84,849	76,584	+ 8,265
	30,163	28,472	+ 1,691	332,929	310,954	+ 21,975
British Road Services ...	6,200	6,576	— 376	64,624	65,212	— 588
Road Passenger Transport : Provincial & Scottish— Buses, coaches & trolley-buses ...	3,453	3,157	+ 296	41,037	37,327	+ 3,710
London Transport— Railways ...	1,419	1,234	+ 185	15,113	13,597	+ 1,516
Buses & coaches ...	3,109	2,643	+ 466	33,298	28,517	+ 4,781
Trolleybuses ...	722	717	+ 5	8,066	8,204	— 138
	5,250	4,594	+ 656	56,477	50,318	+ 6,159
Inland Waterways— Tolls ...	75	71	+ 4	808	736	+ 72
Freight charges, etc. ...	103	96	+ 7	1,075	941	+ 134
	178	167	+ 11	1,883	1,677	+ 206
Total ...	45,244	42,966	+ 2,278	496,950	465,488	+ 31,462

Main-line railway passenger receipts show the usual seasonal drop, but at £7,119,000 compare with last year's figure of £6,832,000, whereas for Period 10 there was an absolute decline compared with 1951. The factors affecting British Railways passenger receipts, including the various fare alterations, are too complex to allow of comparison with last year based on receipts alone. Underground receipts increased compared with the preceding four weeks, and with 1951, whilst bus receipts were less than for Period 10, presumably because of the weather, though they exceeded last year's figure by 17.6 per cent largely on account of fare increases.

PERCENTAGE VARIATION 1952 COMPARED WITH 1951

	Four weeks to November 2		44 weeks to November 2	
	1952	1951	1952	1951
British Railways—				
Passengers ...	+ 4.2		+ 2.6	
Parcels ...	+ 10.0		+ 7.8	
Merchandise & livestock ...	+ 1.6		+ 5.2	
Minerals ...	+ 8.4		+ 15.4	
Coal & coke ...	+ 9.8		+ 10.7	
Total ...	+ 5.9		+ 7.0	
British Road Services ...	— 5.7		— 0.9	
Road Passenger Transport ...	+ 9.3		+ 9.9	
London Transport—				
Railways ...	+ 1.5		+ 11.1	
Buses & coaches ...	+ 17.6		+ 16.7	
Trolleybuses ...	+ 0.6		— 1.6	
Total ...	+ 14.2		+ 12.2	
Inland Waterways ...	+ 6.5		+ 12.2	
Aggregate ...	+ 5.3		+ 6.7	

E

LETTERS TO THE EDITOR

(The Editor is not responsible for opinions of correspondents)

E.C.A.F.E. Mission's Visit to Europe

November 10

SIR,—It was with great interest that, as a member of the E.C.A.F.E. mission, I read the article and editorial note in your November 7 issue on the visit of the Asiatic railway officers to Great Britain. One fact that was inadvertently left out was the visit of the mission to Switzerland, with which the tour was initiated. The mission found the operations of the Swiss Federal Railways very interesting and instructive.

In conclusion, I may mention that we enjoyed our visit to British Railways very much and are very thankful to them for their courtesy, hospitality and painstaking efforts to make our visit a success.

Yours faithfully,

M. A. FARUQUI,
Deputy Chief Engineer, Signals,
North Western Railway, Pakistan

Hotel Terminus Saint-Lazare, Paris

Publicising Nationalised Industries

November 6

SIR,—On personal grounds I feel sorry to think that my letter of September 28 has stung Colonel B. X. Jessop, in your October 31 issue, to such an intemperate reply, so typical of the modern nationalised railwayman's resentment of all criticism and suggestions, if made by their employers and masters, the general public.

On broader grounds, I feel thankful to have been instrumental in showing those railwaymen who decided to stay on under nationalisation, that we do not all think that they have rescued the railways from decay and disintegration, or done the wonderful job which they appear to think they have done, and which all grades from top to bottom never tire of telling each other that they have done. Your editorial article, "Serving the Public," in the current issue is admirable.

In my view, at any rate, the policy of the Transport Commission and the Railway Executive, and its execution at Regional level, have pretty nearly dealt our once magnificent railway network its death-blow. But perhaps Colonel Jessop would say that I have no right to say such a thing, or even to think it?

Yours faithfully,

MICHAEL PETO

Gatehouse, Iford,
near Bradford-on-Avon, Wilts

Fishguard-Rosslare Service and Connections

November 11

SIR,—In a recent issue of an Irish paper a paragraph informed readers that a meeting had been held at Rosslare Harbour under the chairmanship of Mr. R. Paterson, Irish Traffic Superintendent of British Railways, and including representatives of Rosslare Harbour Board, Wexford Chamber of Commerce and Fishguard Urban Council, to discuss Fishguard-Rosslare steamer services. It is excellent to invite interests other than those of railways to take part in such discussions, but it seems strange that members from the Irish Tourist Board, or from Killarney, were not present to widen discussions, and to investigate developments of cross-channel traffic.

My letter in your August 31, 1951, issue suggested that attempts be made, particularly by British Railways, to divert traffic from London and Southern England by way of Fishguard and Rosslare, thereby easing the congestion on the Holyhead route. Little appears to have been done. One wonders why C.I.E. has failed to provide a comfortable and reasonable train service from Rosslare Harbour to the Kerry line, giving direct access to Killarney and Tralee. There are objectionably long waits at Mallow in either

direction, particularly for those travelling from the Kerry line to Rosslare, which amounts to about three hours. This point was raised in correspondence in *The Link*, the official organ of C.I.E., but the expert who replied stated the wait at Mallow in the down direction was not as long as one would suppose because of late running of the Rosslare Harbour-Cork boat express, and that in the reverse direction the cost of a direct service would be unremunerative and that the services *via* Dublin were most adequate. The point of the correspondence was missed.

In view of the repeated official expressions to increase tourist traffic to this country, it is suggested that some concrete action should be taken to develop rail traffic to Killarney and County Kerry by the provision of through facilities between Rosslare Harbour and Tralee, for next summer.

Yours faithfully,

J. MACARTNEY ROBBINS

I, El Verano, Wynward Park,
Clonskeagh, Dublin

"Orient Express"

November 3

SIR,—It was a happy thought on the part of Mr. Dingle Foot, writing in *The Observer* and quoted in *The Scrap Heap* in your October 10 issue, to recall Mr. William Le Queux to mind at the very moment when he is engrossing us in as baffling a train mystery as the master could have devised.

How came Mr. Foot to "climb aboard," at the Gare de Lyon, when the Paris portion of the "Orient Express" pulls out of the Gare de l'Est for Vienna, Budapest, and Bucharest, by way of Germany, on the three nights a week on which it runs?

We toy with the idea of malevolent, physical coercion: dismiss a theory of diversion with evil intent of its empty stock to the southern terminal; and incline—with reserve—to the possibility that he actually boarded the "Simplon-Orient." Admittedly, time and again, in his account of his journey he refers to his train as the "Orient Express."

The first thrill comes when, seemingly conscious of impending danger, he says "we are allowed to sleep unmolested until breakfast time at Milan." Though he mentions that station casually, it must have called for every bit of "traditional insular phlegm" to suppress his dismay when he wiped the steam from the window of the *wagon-restaurant* to read "Milan" instead of "Stuttgart" as a traveller in the "Orient Express" would have expected.

Though it may be the author's privilege of a red herring across the trail, he continues: "after Belgrade the 'Orient Express' completely changes its character . . . it becomes a local train stopping at every wayside halt. The first class carriages vanish. The *wagon-lits* is flanked on each side by carriages with wooden seats." From Belgrade to Istanbul, according to his description, it was pure pioneering. All of which rules out the "Simplon-Orient"; and thus the reserve with which the earlier conjecture was proffered.

What then remains but to wait in patience for the last chapter, when the reader, doubtless, will be able to smile wanly like Dr. Watson at his own obtuseness?

Yours faithfully,

A. L. JONES

P.O.B. 546, Haifa, Israel

SOUTHERN REGION ARTS & CRAFTS EXHIBITION.—The variety of railwaymen's (and women's) hobbies was made abundantly clear at Ashford (Kent) when on November 12, 13, and 14 the first arts and crafts exhibition to be held under the auspices of the Southern Region Staff Association was on view in the Corn Exchange. Exhibits came from all parts of the system, and during the afternoons demonstrations of glove making, basket work, chair caning, lampshade making, and seagrass stool making were given by wives of members in the Kent area.

THE SCRAP HEAP

Summer Service

Item on a Pullman menu: Cold collation and combination salad.

Asked what it meant, the waiter said: "Nothing. It's only on in summer."—"Peterborough" in "The Daily Telegraph."

Cheap Return to Bath

Bundles of forged railway tickets, said by counsel to have been "so good that no ticket-collector would have spotted them," were handed to the Judge at Derbyshire Assizes, when a commercial traveller was accused of forgery. The accused was stated by the prosecution to have had two printing presses and a quantity of type in his bathroom. He collected used railway tickets, pasted coloured paper over them, and then printed them for the destination required. Only the printers employed by British Railways could detect them.

The offences were discovered, said counsel for the prosecution, when a railway detective spoke to the accused at a Manchester station. He at first suspected that he had altered the date on a return ticket, but when a check was made it was found that a ticket with the same serial number was still in stock.

Railway Inn Signs

Designers of signs for inns adjoining railway stations do not choose locomotives and trains for their subjects as often as might be expected. When they do, their treatment varies from the fanciful (deliberate or accidental) to the reasonably objective. Two specimens, sent to us by a correspondent, Mr. P. H. Lovell, illustrate the alternative approaches. The curious sign of the "Railway and Bicycle Hotel" at Sevenoaks, Kent, recalls the days of big driving wheels on rail and road, when apparently cross heads operated without

slidebars, as free as the knees of the pedalling cyclist.

The second sign illustrated belongs to an inn at Guyhirne, Cambridgeshire. Its subject, the "Queen of Scots" Pullman, is depicted with attention to such small details as the electric headlamps and the white disc for showing the express headcode during the hours of daylight.

"If Didididah Goes Bump"

A novel "booms-a-daisy" rail coach—it records bumps and irregularities of track levels—will reach Harwich today from France to make tests on British Railways.—From the "Daily Mail," announcing the arrival on Wednesday of the Mauzin track inspection car.

A Debt to the Railway

When next, in the year 1851, we revisited the same town, a railway had been made, and train after train had transported the holidaymakers from their wonted haunts. It would have been no consolation, however, if, instead of sitting at home, they had got themselves intoxicated abroad; so, at night, we repaired to the railway station, to witness the arrival of the last train from Edinburgh, and see in what state the passengers arrived; but not a single passenger was tipsy—all was perfect sobriety and order. And for this unspeakably gratifying change, wrought in a space of four or five and twenty years, we felt that we must thank, very largely, the railway—which, on general holidays, outbids the whisky-shop and outdoes the Temperance Society.—From "The Scotsman" of November 3, 1852.

Round the Station

Our Lift-Man

He greets me in the morning with a sunny little smile
That more than half convinces me that life is still worth while,
He hums a cheery little tune, he very seldom frowns,
Though, goodness knows, the poor man's life is full of ups and downs.
He's sympathetic when it's wet, he's happy when it's fine,
He even keeps quite cheerful when there's fog all down the line,
And, as for horticulture, he's a blessed connoisseur
Of anti-wireworm tactics and the latest pet manure.
He never seems to vary, his humour doesn't change,
Which, in these very trying times, is really rather strange.
The only little failing which has come to light, so far,
Is an amiable weakness for a frequent cup of "char."
At such-like times of crisis he decamps without excuse,
Withdraws from circulation, hangs his card up—"OUT OF USE"—
And ambles off serenely to some secret rendezvous,
To renew his old acquaintance with his own peculiar brew,
And, if you want the upper floors just then, you have to climb,
Unless you do as I do and postpone it for a time;
But, all the same, he's quite a useful chap to have about—
He can generally tell me if the boss is in or out!

A. B.



[Photos]



[P. H. Lovell]

Sign of the "Railway and Bicycle Hotel" at Sevenoaks (left); and the "Queen of Scots" portrayed outside the "Railway Inn" at Guyhirne, Cambs. (right)

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

CANADA

C.N.R. Bridge Rebuilding

The Canadian National Railways are to rebuild the bridge over the Red Deer River, near Ardley, 16 miles south of Mirror on the Edmonton-Calgary line. The new bridge, with approaches, will be 1,800 ft. long and 160 ft. from the base of rail to the water line. The previous structure was washed away in April when ice in the Red Deer River rose to unprecedented levels.

Diesel Workshops in British Columbia

Some \$1,689,000 has been earmarked by the Canadian Pacific Railway for the provision at Nelson, British Columbia, of facilities for repairs to and servicing of diesel locomotives. The C.P.R. is expected to take delivery next summer of a \$15,000,000 order for 73 streamline diesel locomotives, which will monopolise freight and passenger haulage in the Kettle Valley and Kootenay division. The locomotives are to be delivered by the Canadian Locomotive Company, General Motors Diesel Limited, and Montreal Locomotive Works. It is expected that the maintenance plant at Nelson will be ready to accommodate the first locomotive to be delivered.

UNITED STATES

"North Coast Limited" Accelerated

In the middle 1940's strong pressure was brought to bear on the railways serving the great cities of the north-west—Seattle, Tacoma, and Spokane in particular—to give those cities services equal in speed to those between Chicago and Los Angeles, San Francisco, and Portland. This resulted in the Great Northern and the Chicago, Milwaukee, St. Paul & Pacific transforming their "Empire Builder" and "Olympian" Chicago-Seattle trains into high-speed streamline services, with accelerations of up to 12 hr. in their running times; the "Olympian" became the "Olympian Hiawatha." It was expected that the Northern Pacific Railroad would follow suit with its competing "North Coast Limited," but the acceleration did not take place at that time, although the train was re-equipped with new streamline stock.

Such has been the success of the new "Empire Builder" and the "Olympian Hiawatha" (the "Empire Builder" is supplemented by a second streamliner, the "Western Star," making intermediate calls missed by the faster train) that the Northern Pacific Railroad has at last accelerated the "North Coast Limited" similarly to a 46½ hr. schedule over the 2,319 miles between Chicago and Seattle, involving a cut of 12 hr. westbound and 9½ hr. eastbound on present timings. To serve intermediate stations, which are now missed by the

"North Coast Limited," the existing stopping train, the "Alaskan," has been speeded up, given the restaurant facilities previously available at station stops only, and is renamed the "Main-streeter," and a new stopping service is provided over the 451 miles between St. Paul and Mandan, North Dakota.

Each of the five sets of stock required to maintain the "North Coast Limited" service has two "dome" chair cars and one "dome" sleeper. These improved services came into operation on November 16.

MEXICO

"Railway City"

Details of Ciudad Ferrocarrilera (Railway City) which will house some 20,000 railwaymen and their families on land adjacent to the new Valley of Mexico terminus in Mexico City, were given by an official of the National Railways at the Eighth Mexican Congress of Architecture held in October.

A minimum of 5,000 houses will be erected, of individual type but constructed in series, possibly prefabricated units, to lower costs. Doors and windows, bathrooms, kitchens and other installations will be prefabricated units. The homes are to be sold to railway workers on a long-term payment plan, and at cost. The scheme has won much approval and may be extended to other parts of the country.

FRANCE

Apprentice Exchange

As in previous years, 40 S.N.C.F. apprentices from the department responsible for the electrical apparatus used in signalling installations, whilst attending a course at the Moulin-Neuf apprentice training school, recently

passed two weeks in Belgium as the guests of the S.N.C.B. In return, 40 S.N.C.B. apprentices subsequently visited France as the guests of the S.N.C.F.

The Belgian visitors were given the opportunity of inspecting the Génissiat hydro-electric station, and the installations on the Aix-les-Bains - La Rochesur-Foron line, and were also given a comprehensive tour of the Mediterranean area of S.N.C.F.

Success of Zonal Schemes

Some indication of the value to the S.N.C.F. of the zonal schemes which have been put into force at certain centres (see the April 11 issue) is derived from figures recently published on traffic handled in the area controlled by the zonal centre of Chalon-sur-Saône. The centre was opened in mid-1951, and during the second six months of that year traffic originating was almost identical with that for the corresponding period in 1950; the total operating costs for relevant road and rail services during the months of July to December, 1951, were approximately 40 per cent less than in 1950.

After the inauguration of the scheme there was a slight resistance by customers to the change, but this phase quickly passed when it was realised that a better service was being offered at no extra cost.

AUSTRIA

Electrification

Early in October electric traction was inaugurated on the 11-mile line between Villach and Arnoldstein near the Italian frontier. Work between Arnoldstein and Tarvisio (the Italian frontier station on the line to Udine and Venice) a distance of some six miles, has been delayed by the necessity of reconstructing

Brussels Junction Railway



Congrès Station, Brussels, on the new north-south six-track line through the city, of which two tracks are now in use (see October 10 issue)

a tunnel to the north of Tarvisio. Once this section is completed electric traction will be in operation from Udine in the south, 58 miles from Tarvisio, to Linz in the north (via Schwarzach-St. Veit and Salzburg), 212 miles from Tarvisio.

On the Vienna-Linz main line the electrification of the last section, between Vienna and Amstetten, 79 route-miles, is expected to be far enough advanced by the end of the year to enable passenger trains to be electrically worked; goods trains will continue to be steam operated for the time being.

The electrification of the southern main line, Vienna - Bruch-an der-Mur - Villach, with the branch from Bruck-an der-Mur to Graz, has been postponed for financial reasons, as reported in our September 12 issue, although that of the single-track line, 51½ miles long, between Wels (on the Linz-Salzburg main line, 15 miles west of Linz) and Passau, on the Bavarian frontier, is to be begun.

The extension of electric traction has been handicapped by the delay in the completion of the underground power station near Braz, on the Innsbruck-Bregenz main line west of the Arlberg tunnel. This power station, mentioned

in our August 10, 1951 issue, has an underground hall 213 ft. long, 69 ft. high and 55½ ft. wide which is to contain three generator groups of 11,000 h.p. each enabling a total production of 75 million kWh to be attained annually.

WESTERN GERMANY

Experimental Refreshment Car

Inclusion of standard-type restaurant cars in F-trains with limited loads having proved uneconomic because of the restricted patronage available, three over-age main-line coaches have been converted experimentally into composite refreshment cars. One half contains a restaurant compartment seating 17, with a kitchen, and so on, while the other half has been subdivided into four compartments of the type adopted for F-train coaching stock (second class only) with a reading lamp for every passenger. (The gradual introduction of individual reading lamps in all D-train stock on the Federal Railways was decided on some time ago.)

Conforming to the livery adopted for F-train stock the experimental refreshment cars have been painted blue.

The seating in the restaurant compartment of these coaches differs from the conventional arrangement of tables for four. The tables in the new cars are oval, and diners sit diagonally opposite each other; the chairs are of the revolving type. Each diner can be served individually, whereas in ordinary restaurant cars waiters must serve the window-seats across the table from the gangway.

The official designation of these cars is ABR, A for first class, B for second, and R for restaurant.

IRELAND

C.I.E. Electricians' Strike Ends

The C.I.E. electricians' strike ended on November 14 after having lasted over seventeen months. The strike arose over a difference of 1½d. an hour between the "down town" rate and the C.I.E. offer of 3s. 7d. an hour, and at first involved 100 men.

The dispute was the subject of two Labour Court awards but neither was accepted by the Electrical Trade Union. No official statement on terms of settlement has been made.

Publications Received

Overseas Railways, 1952. London, S.W.1: The Railway Gazette, 33, Tothill Street. 11½ in. × 8½ in. 128 pp. Fully illustrated. Paper covers. Price 7s. 6d.—The progress to date and development plans of the principal railway systems of the British Commonwealth, of British-owned railways, and of railways overseas where British influence is strong are described in this special annual review, in most cases by the General Manager or a senior officer. The railways of the Dominion of India are dealt with in articles by the General Managers of the six systems into which they now are regrouped, and the reorganisation is illustrated with specially drawn maps. Mention is made of the progress of diesel traction on the North Western Railway of Pakistan. The treatment of the various railways in Africa shows the great scope of future development, as for instance of the projected rail link between Tanganyika and Rhodesia. Dieselisation is prominent in the achievements and plans described of the two major Canadian systems, of those of the several Australian States and Commonwealth, and of New Zealand. Developments in many other railway activities, such as centralised traffic control, administrative reorganisation, and staff education and welfare also are discussed.

Builder and Dreamer. A life of Isambard Kingdom Brunel. By Laurence Meynell. Bodley Head Books for Boys and Girls. London: The Bodley Head, 28, Little Russell Street, W.C.1. 8 in. × 5½ in. 192 pp. Illustrated. Price 9s. 6d. net.—Mr. Meynell calls Brunel a poet-engineer and no more fitting

epitaph could be found for him. Whatever Brunel did, it was with the dash and boldness inherited from his distinguished French father, as whose resident engineer for the Thames Tunnel he began his brilliant career. Brunel and Robert Stephenson were the last of the "engineers"—to use the term in its original wide sense—before inevitable specialisation set in. The author brings out Brunel's versatility and, rightly devoting most of the book to the Great Western Railway as his masterpiece, well describes his many other ventures, such as the remarkable prefabricated hospital for the Crimea. The boy or girl with a questing mind should find it absorbing reading.

Hydraulic Systems for Machine Tool Operations.—A further addition to the Vacuum Oil Company's current technical series of manuals on questions connected with lubrication, a guide to hydraulically-operated machine tools, has now been published. In recent years, the need for greater production at lower cost has done much to encourage the use of hydraulics for the control of machine tools. The use of the correct fluid medium in hydraulic systems is therefore assuming even greater importance. This is emphasised in this new publication which is intended to help all those concerned in the operation of these systems to obtain the smooth, uninterrupted flow of production which can give maximum rewards for the installation of this costly type of equipment. The approach is essentially a practical one, and a brief review is given of the principles of hydraulic operation and of the great advantages which it can give in ease of control and economy of power.

Theoretical questions are therefore referred to only in so far as they have a direct bearing upon problems of operation. Numerous diagrams are included depicting various hydraulic systems. The book is available free of charge from the head office of the company or from branches throughout the country.

Identification of Threading Dies.—A third edition of "The Identification of Threading Dies" has recently been issued by W. H. A. Robertson & Co. Ltd. This edition illustrates thread rolling dies, which have recently been added to the firm's products, and identifies some 300 chasers and dies of different types, the majority of which are illustrated. The booklet also gives details of 60 different series of the principal seven thread systems used throughout the world. A die recutting service is available; no charge is made for examination. Complimentary copies of the booklet are available on application.

Welding Electrodes.—A new technical circular, No. T.C. 858, has been issued by the Quasi-Arc Co. Ltd. describing the Low Hydrogen 35 electrode, which has been designed to provide an ultimate tensile strength of at least 35 tons per sq. in. in the weld metal. These electrodes are used for welding medium high tensile, carbon and alloy steels, and also for commercial quality steels having higher carbon and sulphur contents than mild steel of welding quality. The electrodes are also widely used for welding highly restrained joints and heavy sections of mild steel. The electrodes are made in sizes 12 swg. to ⅝ in. dia. Copies of the leaflet are available from the company.

Confines of Braking—4*

*Conditions of adhesion
between wheel and rail*

By H. R. Broadbent, B.Eng.

IN the previous part of this article various factors affecting the coefficient of friction between block and wheel were considered. The present instalment deals with the various conditions between wheel and rail and their effect on braking.

Wheel and Rail

The variation in conditions which may take place between wheel and rail is dominated by the adhesion between the two. The limitation which it imposes on braking has already been discussed. Many attempts have been made to arrive at a real value under varying conditions, but the scatter between points continues to be high. All that can be said is that the braking force can be no higher than the co-efficient of friction between wheel and rail will allow.

The other factors under this heading are as follows:—

Variation in Passenger Loading.—With no compensating device for passenger loading, the maximum rate of braking decided by unloaded conditions may decrease by over 30 per cent. with a heavily loaded train. If there is compensation, the effect on maximum braking will be controlled by the limits of the device.

With a load-compensating device applied to each car there will be variations between one end and the other which it would not be practicable to allow for. The load compensator can therefore only work to average car loading. It is also liable to variation in spring movement, and the mechanical limits to which it can be set.

With retarder control the total weight of the train controls the cylinder pressure, and it is therefore an average weight per car for the whole train which is measured. With variation in passenger loading between car and car, the braking must be set down to a value lower than would be possible if all cars were loaded in such a way as to give a proportionate increase in weight on all axles.

Weight Transfer.—When a train is braked the forces acting on the various parts produce an effect which reduces the weight on some axles and increases it on others. The transfer, with intensive service rates of braking, can be over 10 per cent. A simple case is discussed in Fig. 13. For a fuller treatment reference may be made to an article in *The Railway Gazette* of June 16, 1950.

Deposits on Rail.—Under this heading can be included rusting, soot, oil and grease, used brake block material, dew, and rain. It is well known that a wet rail reduces adhesion, and that the

decrease below the dry figure with a "greasy" rail may be even greater. The description "greasy" includes the condition of a rail unused during the night, with a layer of rust and a deposit of moisture. Fully wet conditions have been found to produce a reduction in coefficient between wheel and rail of the order of 20 per cent, which may be exceeded with the other forms of deposit.

With non-metallic blocks it has been found that the products of braking contaminate both rail and wheel. The combination of greater smoothness of wheel tread with the contamination reduces the coefficient of friction between wheel and rail by about 20 per cent. The degree to which each of the two factors contribute to this reduction is not known.

Effect of Speed.—Various opinions on

the reduction which is said to occur with higher train speeds were quoted in a paper read before the Institution of Locomotive Engineers in 1948.* Whether the effect described is produced by the peripheral speed of the wheel or by some other factor in wheel/rail contact which is a result of that speed, and varies, say, with track conditions and out-of-balance of rotating parts, is not known.

Data regarding the effect of speed on adhesion are derived mainly from tests of tractive effort. It would appear probable that braking conditions differ sufficiently to make it necessary to approach the problem, initially at least, as a distinct issue.

* "Adhesion and Friction in Rail Traction," by J. Koffmann, read at the Institution of Locomotive Engineers, October 20, 1948.

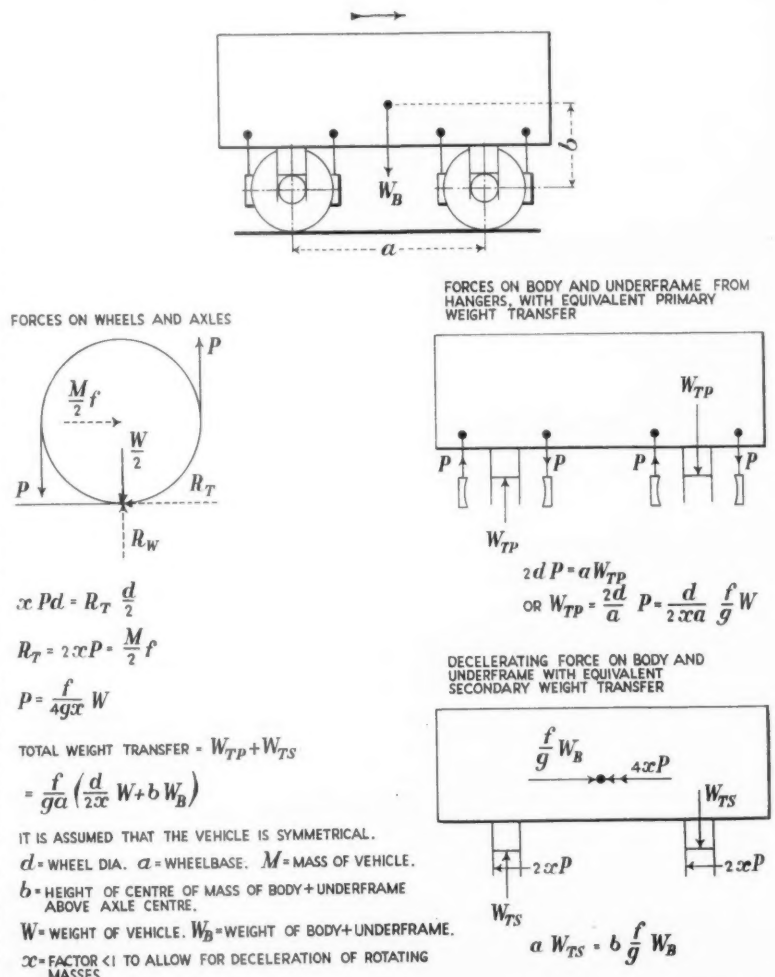


Fig. 13—A simple demonstration of weight transfer

* Previous parts of this article appeared in our issues of October 31, November 7, and November 14

Mutual Wheel/Rail Contact.—In mentioning the effect of speed, reference was made to other factors affected by speed. These include the condition of joints, crossovers, points, and worn rails. The supporting ballast sleepers and chairs must also be considered as contributory agents in affecting the contact between wheel and rail. Little information is available to enable a designer to allow for such factors.

Gradients.—The rate of maximum braking on a gradient is automatically increased or decreased by a gradient.

On railways using steel rails and wheels, the effect of gradient on adhesion is negligible. For instance, a 1 in 30 grade alters the weight available for adhesion by only 0.66 per cent. On the other hand the force assisting or reducing braking is appreciable (Fig. 14.) If maximum use is being made of the adhesive weight, the maximum braking force which can be exerted by torque braking = $\psi W \cos \alpha$.

The net maximum braking force = $W(\psi \cos \alpha \pm \sin \alpha)$.

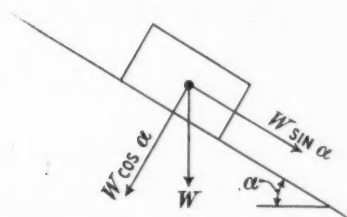


Fig. 14—Force assisting or reducing braking on a gradient

With a 1 in 30 grade and an adhesion ratio of 0.2 the net maximum braking force = $W(0.20 \pm 0.033)$ —this being an alteration of 16.7 per cent.

It is to be observed that, where an equalised brake cylinder pressure produces a braking force on the limit of adhesion on the level, the same cylinder pressure would tend to cause pick-up on a down grade, when braking with

unbraked wagons, if the equalised cylinder pressure were on the limit for the locomotive operating on its own. This is due to the reduction in torque absorbed in such cases by the rotating parts and the consequent higher net force at the wheel tread.

Train

Frictional Resistance.—Frictional train resistance helps braking and thereby always reduces the work to be done by other means of braking. In the case of pneumatic tyres this resistance is relatively high and the contribution to braking is appreciable. With steel wheels the amount is small and may generally be neglected.

Windage.—On the other hand the effect of windage is appreciable whether self-made or not.

On occasions when winds are high and follow a train, extra braking force would be required, and should the braking be on the limit, the extra force might cause wheel pick-up.

(To be continued)

Norfolk & Western Steam-Turbine-Electric Locomotive

A coal-fired locomotive weighing some 600 tons and generating steam at 600 lb. per sq. in.

A STEAM-TURBINE-ELECTRIC locomotive, to which editorial reference was made in our September 5 issue, has recently been under construction at the Roanoke works of the Norfolk & Western Railway, U.S.A., for heavy goods service. The locomotive, which is to be coal-fired, is 161 ft. 1½ in. between couplers, will weigh some 600 tons, and develop 4,500 h.p. Starting tractive effort will be 177,800 lb. and continuous tractive effort 125,000 lb. The boiler, main generator, and steam turbine will be carried behind the cab, with coal space at the front end of the locomotive; a separate tender is to be provided for carrying water.

It was felt that the major problem would not arise in the design of a turbine, but in the provision of an adequate steam generator. In connection with Babcock & Wilcox, a water-tube boiler has been built, and has undergone successful tests. The boiler, which is 33 ft. long, has a firebox fed by an automatic stoker, and there is a controlled forced draught. Coal is spread thinly on to a chain grate in the firebox and specially-treated water will be used in the generation of steam at 600 lb. per sq. in.

After superheating, the steam will drive a single turbine, which in turn, will power the main and auxiliary elec-

tricity generators. There are 12 traction motors geared to the driving axles of the locomotive.

Dynamic braking will be used and the current produced will be absorbed by two resistances giving off heat through ventilators in the roof. The Norfolk & Western Railway does not possess a turntable of sufficient length to turn the complete locomotive, and to facilitate turning, quick-coupling hose connections are to be provided between the engine and its double-ended tender. At the motive power depot the tender is easily detached and the engine unit may then be turned on the turntable and recoupled to the other end of the tender.

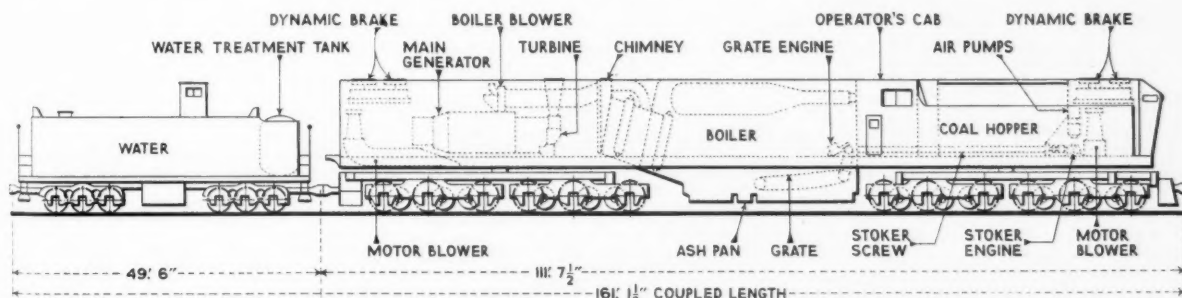


Diagram showing the layout of the principal features of the Norfolk & Western Railway steam-turbine-electric locomotive with water tube boiler

LIGHTING FITTINGS PRICES REDUCED.—The prices of some of the more widely used G.E.C. fluorescent lighting fittings have been lowered by as much as 20 per cent. as from October 15. At the same time the

General Electric Co. Ltd. has reduced prices of fluorescent tube auxiliary gear by 5 per cent. Philips Electrical Ltd. also announces price reductions in a wide range of fluorescent fittings and accessories.

Altogether prices of thirty fluorescent fittings and five tungsten lamp reflectors have been reduced, together with auxiliary gear for 5 ft. 80 watt and 4 ft. 40 watt fluorescent tubes.

New Baltic Ferry Connection

Unusual type of train ferry terminal at Grossenbrode, on new international route between Scandinavia and the West

THE direct rail and sea connection between the Danish island of Lolland and the island of Fehmarn in the West German province of Schleswig-Holstein to some extent has been anticipated by the temporary expedient of a train ferry service between the Danish ferry terminal of Gedser and the new German terminal at Grossenbrode. Reference to the new ferry and to the curtailment which it affords of journeys between Hamburg and Lübeck and Central and Western European stations on the one hand, and Copenhagen, Sweden, and Norway on the other, was made in our issue of January 11, 1952.

Whereas a ferry terminal existed already at Gedser, northern terminus of the passenger and goods train ferry to Warnemünde (now in Eastern Germany), part of the prewar Copenhagen-Berlin and Copenhagen-Hamburg through routes, it was necessary to build an entirely new terminal at Grossenbrode; and the congestion caused by post-war growth of traffic on the Great Belt (Nyborg-Korsør) ferry increased the urgency of the task.

The decision to proceed with the Grossenbrode-Gedser ferry scheme was taken by the Danish State and German Federal Railways administrations early in 1951. The ferry terminal at Grossenbrode was brought into use on July 14, 1951, less than three months after construction began. This was made possible by the adoption of an unorthodox method of constructing the ferry berth proper which, instead of being excavated from the shore, has simply been "marked out" from the sea by suitably arranged piling, the railway and road connection with the shore being over a lifting bridge.

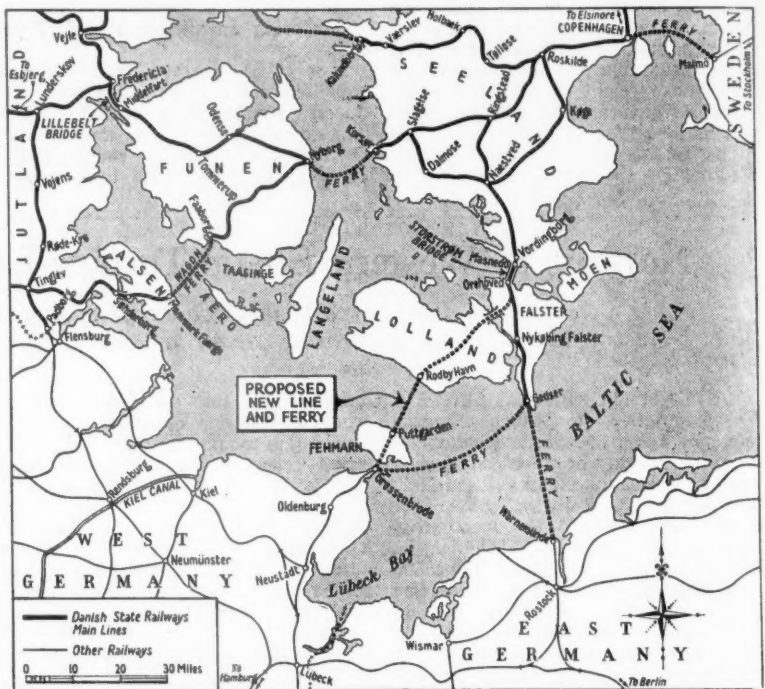
The bridge is supported by the abutment at the shore end, one pair of intermediate columns, and one pair of columns at the sea end. These structures are carried by 117 reinforced concrete piles of nearly 50-ft. length, partly vertical and partly inclined at 1 in 4. The bridge is designed for normal rail and road loads. It is not exposed to forces arising from the berthing of the ferryboat, which are completely absorbed by the ferry berth proper. The bridge carries a 9-ft. 10-in. roadway flanked by two 3-ft. footwalks, and gauntleted double railway track. The maximum gradient, and thus the length of the bridge, were determined by the maximum difference in the water level which in this part of the Baltic, is about 8 ft., by the rail level of the different ferryboats, and the necessary safety margins. The total vertical play of the bridge is some 20 ft., the length 138 ft., and the maximum gradient to be negotiated by railway vehicles 1 in 27.

The structure consists of two spans of two main girders with top deck. Each girder consists of two standard I profiles

braced by vertical and horizontal flats. On the landward side, these girders rest on roller bearings and are anchored to the abutment by hinged ties and rubber buffers for the absorption of horizontal forces. At the intermediate columns, the girders of the first span are suspended so that they can be fixed in seven different vertical positions at about 20-in. intervals. The girders of the second

required position. The main berthing impact is absorbed by a row of piles on the east side of the ferry berth which is first approached by the ferryboat before nosing her way into the ferry berth proper.

At present, no passenger vehicles are conveyed in regular service by the Grossenbrode-Gedser ferryboats. There is one passenger service each way daily



Train ferry connections between Denmark, Germany and Sweden. The Helsingør (Elsinore)—Helsingborg train ferry, for traffic between Denmark, Gothenburg, and Norway, is north of the area shown

span rest on cantilevered portions of the girders of the first span and, at their outer ends, on a transverse lifting girder which in its turn is suspended from two lifting towers by counterweights. The weight of the bridge is counterbalanced except for some 8 tons, so that the bridge will not move upwards unless operated by the two 6-ton power winches; the latter can be operated manually or electrically from a small control cabin at the sea end of the bridge where the movements of the ship can be observed at close range.

Construction of Ferry Berth

The ferry berth is formed of 96 steel cylinders 69 ft. long and 18½ in. dia. combined in groups of six or seven so as to serve as a strong elastic piling which can move 20 in. horizontally under the impact of a 3,800-ton vessel and then gently press her back into the

between Hamburg and Copenhagen; the total distance is covered in 9 hr., and the sea passage takes 3½ hr. There is a steam-hauled boat train between Copenhagen and Gedser, allowed 2 hr. 20 min. southbound and 2 hr. 9 min. northbound for the 111 miles, and a diesel set for the Hamburg-Grossenbrode section, with about 2½ hr. allowed for the 90-mile journey.

From May 17, 1953, some international expresses will be routed this way, instead of via the Great Belt ferry, with through vehicles carried by the ferryboat, which will be allowed some 2½ hr. for the crossing. "The Scandinavia-Italy Express" will be routed via Grossenbrode; it is stated that this train will run non-stop between Lübeck and Hanover. The "Nord Express" will continue to run via Flensburg, Fredericia, and the Great Belt ferry to Copenhagen, Stockholm, and Oslo.

Reconditioning of London Transport Class "F" Cars

All-steel stock originally built for and operated by the District Railway and now used on Metropolitan Line fast services



Four-car unit of class "F" stock running on the Metropolitan Line

THE first postwar programme of the London Transport Executive for rolling stock replacement covered the scrapping of the 1910-13 District Line steel cars and the 1904-21 Circle Line (former Metropolitan) wooden cars. For convenience of operation and maintenance all the replacement class "R" cars have been allocated to the District Line, the Circle Line has received units of class "P" stock from the Uxbridge service of the Metropolitan Line, and the Metropolitan Line has received the complete fleet of class "F" stock from the District Line.

Ample Capacity

By reason of its speed and passenger capacity the "F" stock, which consists of 24 four-car units, is particularly suitable for working the fast outer-urban service on the Metropolitan Line; and now operates in eight-car trains to Harrow and Uxbridge. Later, four-car units of this stock will take over the East London Line service from the old District Line trains at present operating there.

The class "F" stock was built for the Metropolitan District Railway by the Metropolitan Carriage & Wagon Co. Ltd. in 1920-21. In its design it broke away completely from previous District Railway practice. An integral all-steel body of the maximum possible width, with three double doorways on each side, was used; this, assisted by the arrangement of the seating—longitudinal seats in the two centre bays and transverse seats in the end bays—gave the cars a passenger capacity and speed of loading and unloading far above anything previously attained. In these respects they still stand high. The "F" stock originally had hand-operated doors, but air operation was installed before the war. Electro-pneumatic braking had also been provided some years earlier and it was, in fact, the

pioneer installation of this equipment. Automatic control of acceleration was not included in the original British Thomson-Houston equipment, and as to provide it now would be expensive, these are today the only London Transport trains system with hand-notched motors.

Structural Condition

Normally, Underground stock was designed for a life of 30 years, but the class "F" cars are in such good structural condition and so well able to fulfil operational requirements that they are being retained for a further 10 years. Their retention, however, entails heavy reconditioning outside the scope of normal overhaul work, and the 99 cars of this class are therefore being passed

through the reconstruction shop at Acton Works.

The most important of the work being undertaken is the renewal of all electrical power cabling and control wiring, except for a small amount installed comparatively recently. To improve reliability and ease maintenance the non-standard drivers' brake controllers of the original pattern are being replaced by self-contained standard units from tube stock.

Re-panelling

As the side panels of many cars are badly corroded at floor level, they are being cut away; new panelling is being welded in after repairs to the body pillars have been carried out. As the structural repairs are completed new doors cast in Alpax aluminium alloy are being substituted for the original wooden doors; door interlock switches are being replaced by the latest mercury-tube type.

Door tracks are being repositioned to minimise the space for the entry of draughts and water between door and body side, and modifications beneath the seats will further minimise draughts and give easier access to the door-operating engines. The main sidelights are being removed for repairs to the frames and panelling, and the hinged ventilators are being improved.

To improve passenger amenities, other measures are being adopted. Because of their size, seating arrangements, and lack of polished wooden panelling, these cars have always presented a somewhat austere appearance internally, and some alleviation of this

(Continued on page 575)



Interior of car after complete reconditioning this year, showing additional lighting now fitted along sides

Locomotive Crankpin Quartering Machine

Double-headed design, equipped with re-turning and grinding attachments

AMONG the orders recently completed by Craven Brothers (Manchester) Limited is one for two double-headed locomotive crankpin quartering machines for the Indian Government Railways. Both machines are similar in design and capacity, and are capable of dealing with wheel sets within the following ranges: broad-gauge, from 4 ft. 3 in. dia. to 6 ft. 3 in. dia.; metre and 3 ft. 6 in. gauge, from 3 ft. 7 in. dia. to 4 ft. 9 in. dia.

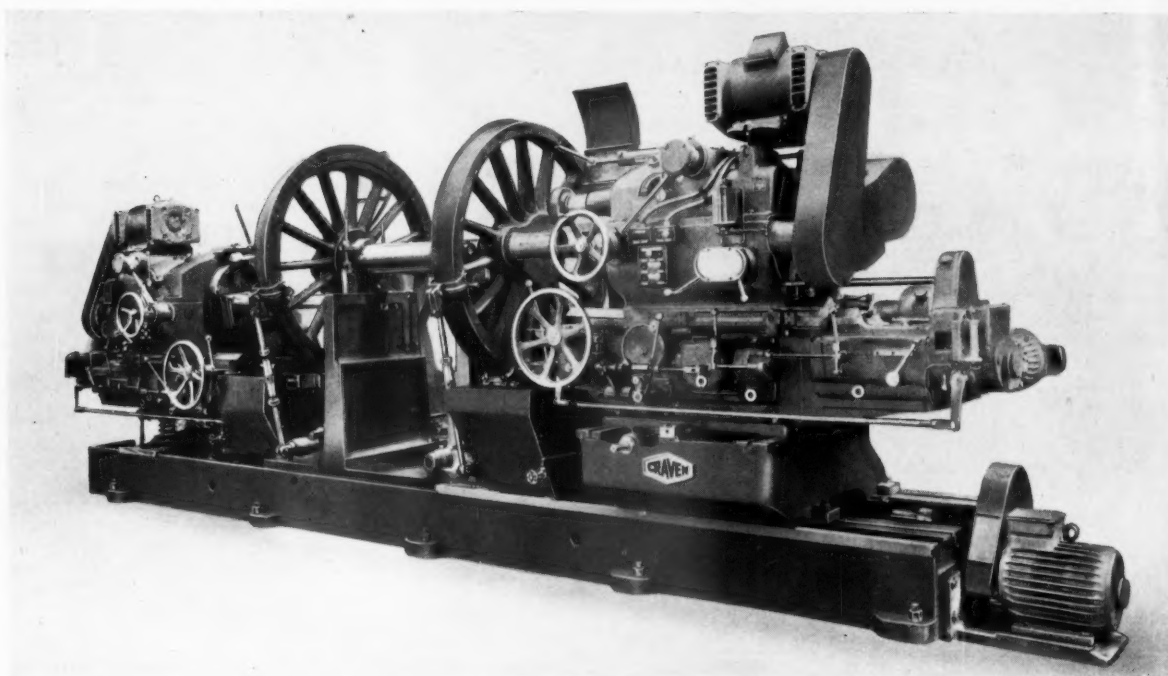
trunnions; provision is made for power adjustment if required. The right-hand headstock has horizontal adjustment. Dead stops with gauges are provided for rapid setting of the machining heads to suit the throw of the crankpins. Dual standards secured to the bed of the machine hold the wheel sets during machining operations. Vertical slides and vee-type supports are provided; both are adjustable.

Poppet heads, set centrally by means

ing and unloading. Elevation of the left-hand head is by worm and worm-wheel; a hand ratchet lever is provided.

Machining Operations

The turning and grinding spindles are designed as self-contained detachable units arranged for bolting to a cross-slide on the faceplates. The slide is adjusted radially for application of the cut while the machine is running by means of a handwheel which controls a scroll



Craven crankpin quartering machine, two of which have been supplied to the Indian Government Railways

The disposition of the spindles to each other is 90 deg., right-hand crank leading. Maximum and minimum diameters of pins within the capacity of the machine are 9 in. and 2 in. respectively. Longitudinal traverse of each head is 16 in.

Design Particulars

Each machine is designed to deal with wheels mounted on their axles and is arranged for re-turning and grinding worn coupling and connecting rod crankpins, boring parallel or tapered holes for fitting new crankpins, facing wheel bosses in the vicinity of the pins and internal or external screw cutting. The machine heads are independently operated, so that machining of both pins can be carried out simultaneously.

The left-hand headstock is adjusted vertically by hand by means of two

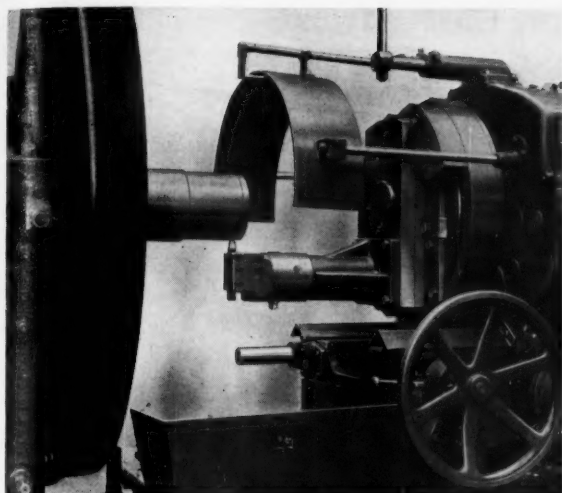
of locating pins, enable the operator to set axles to their original centre holes if required. Final adjustment of the wheel sets to bring the crankpin exactly in line with the vertical axis of the main spindle is effected by setting link turnbuckles. Precise vertical setting of the left-hand spindle and transverse setting of the right-hand spindle is facilitated by the provision of vernier rules.

The machine heads are arranged to machine crankpins of 7 in. minimum to 15 in. maximum throw. To provide for this range the left-hand head has vertical adjustment; while the right-hand head has horizontal adjustment along a cross bed. The cross bed with its headstock can be traversed along the main bed either by hand with screw or ratchet lever, or by a 5-h.p. reversing motor, and facilitates machine load-

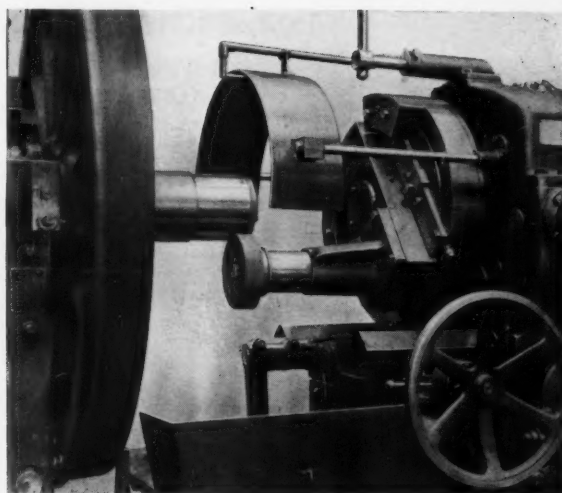
inside each faceplate, the scroll in turn operating the cross-slide. Parallel crankpin holes in wheels are bored by means of snout boring tools carried in special adapter brackets bolted to the spindle slide. For this purpose longitudinal feed only is utilised, the radial slide being inoperative.

For tapered holes a boring bar with a tapered slideway and travelling tool head is used. This is secured at one end to the spindle slide by means of an adapter bracket and, passing through the hole to be re-bored, is supported by bearings carried on the support standard. The cutting feed along the tapered slideway is effected by star wheel and tappet mechanism.

Each machine head has a main spindle driven by a separate 5-h.p. constant-speed motor and a six-speed gearbox, at speeds ranging from 12.6 to



Turning a worn locomotive crankpin before finish grinding operation



The same machine head fitted with the crankpin grinding attachment

59 r.p.m. A separate 2½-h.p. high-speed motor drives through vee-belts to a shaft inside the main spindle. The final drive is by silent chain and rotates the grinding wheel spindle at a constant speed of 2,570 r.p.m.; the arrangement is suitable either for parallel pin grinding or finishing the crankpin hole.

Three rates of longitudinal traverse, ¼ in., ½ in. and ¾ in. per revolution of the main spindle, are provided for grinding. The traverse is arranged with stroke-setting dials and automatic re-

versing mechanism. Eight longitudinal feeds, 1/20 in. to 1/120 in. per revolution of the spindle, are provided for turning, drilling and boring. Screw-cutting arrangements are embodied in the headstocks; a complete set of changewheels are provided. The bed is of box-section construction, accurately machined, and lubrication to all working parts is by "one-shot" pumps as far as possible, otherwise oil nipples are arranged.

The change gears in the gearboxes

run in an oil bath. Cutting lubricant is delivered by a combined motor and pump unit; trays and shields are provided for carrying spent cutting lubricant to a tray situated at the end of the machine bed. The equipment supplied with the machine includes four self-acting taper boring bars, four parallel boring bars, two diamond combined grinding wheel fixtures and radius forming devices, a sensitive level, and Morse taper sockets; sample cutting tools are also supplied.

Reconditioning of London Transport Class "F" Cars

(Concluded from page 573)

is being attempted. Additional lamps are being fitted along the sides and at the ends of the cars, the seats are being rebuilt and covered with moquette of an attractive new pattern, and special attention is being paid to the interior painting, for which a four-colour scheme is being used.

New Springs

Riding is being improved by replacement of the bogie side springing, new 12-plate laminated springs being substituted for the old 7-plate type, and new rubber auxiliary springs are also being fitted. Other mechanical improvements are being carried out to the brake gear, buffers, and air pipework, and the couplers are being altered to the London Transport standard type.

At the same time, normal overhaul work, including repainting, has been carried out, and opportunity has been taken to complete programmed modifications which would otherwise have been made at the running depot, such as the bringing into service of the push-button equipment to permit passengers to open individual doors at open sta-

tions. This type of equipment has been in use for some time on the more modern rolling stock operating on the Uxbridge service of the Metropolitan Line.

INSTITUTE OF TRAFFIC ADMINISTRATION.—The speaker at the meeting of the Portsmouth Centre of the Institute of Traffic Administration, held on November 6, was Mr. C. P. Millard, Goods Agent, British Railways, Portsmouth, who spoke on "Some Aspects of Railway Commercial Work." He paid particular attention to rates structure and goods classification. Mr. D. Thompson thanked the speaker for a very interesting lecture and proposed the vote of thanks. The next meeting of the Institute will be on December 9 at the Portsmouth Chamber of Commerce, when Mr. W. S. Jefferis, Assistant Engineer, Road Haulage Executive, Southampton District, will speak on "Vehicle Maintenance."

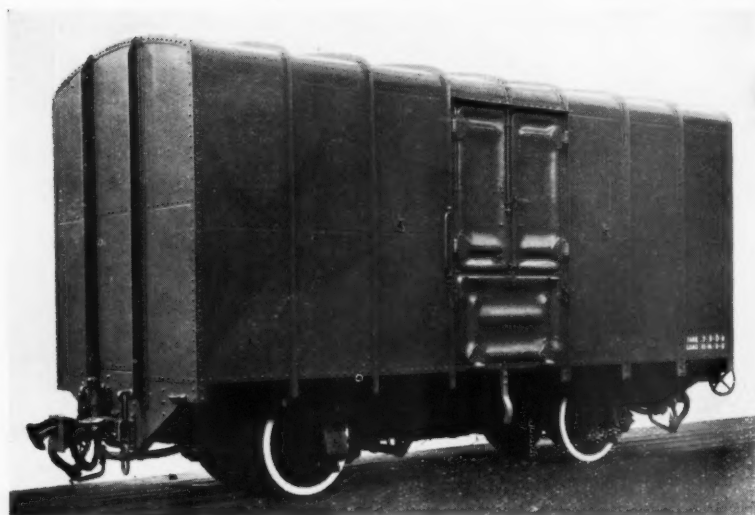
ALUMINIUM-SHEATHED SIGNALLING CABLE.—For Stage 2, between Battersea Park and Selhurst, of the Southern Region Brighton line colour-light signalling scheme, British Insulated Callender's Cable Limited supplied what is believed to be the first length of aluminium-sheathed paper-insulated cable to be used purely for signalling purposes. The length of the cable was 3,500 yd., and the corrosion proofing was arranged for installation in

the new Southern Region standard concrete troughing. B.I.C.C. also supplied 6,500 yd. of two-core paper-insulated lead-sheathed feeder cables with conductors of 7.064 in.; and approximately 200 core-miles of multi-core vulcanised-rubber-insulated, lead- or bitumen-sheathed cable, varying from 5 to 36 cores. The resigalling was described in our October 17 issue.

RAILWAY FIRST AID.—In answer to a correspondent in *The Daily Telegraph*, Mr. A. J. Pearson, Chief Officer (Administration) Railway Executive, has pointed out that every passenger train, each station and depot, and a considerable number of signalboxes on British Railways are provided with first-aid equipment to deal with all normal requirements. It is not practicable to provide at each of these places medical supplies to meet a disaster such as occurred at Harrow. The railways must therefore turn to local hospitals for help in serious accidents, and standing arrangements are in force, including display of first-aid arrangements card at all stations and depots, containing the addresses of nearest doctors, nearest hospital, motor ambulance and other ambulance organisations, and also the names of railway staff qualified to render first aid. These persons and bodies are immediately contacted by the stationmaster or official in charge. The first ambulance arrived at the scene of the Harrow accident within four minutes as a result. The railway emergency medical arrangements have recently been reviewed.

Goods Wagons for East Africa

Equipped with dual brakes for operating on the Kenya & Uganda and Tanganyika sections



THE goods tonnage carried by the East African Railways & Harbours in 1950 was the highest recorded. As pointed out in an editorial article in our October 5, 1951, issue, the average monthly ton-mileage handled was 80 million, 6.6 per cent higher than the previous record for a peak month, and the position was such that every wagon was doing 50 per cent more work than in 1939.

With a view to improving the wagon position, the Crown Agents for the Colonies placed a contract with the Metropolitan-Cammell Carriage & Wagon Co. Ltd. for the supply of 165 four-wheel covered goods wagons having a carrying capacity of approximately 5½ tons. To enable the wagons

to operate on the Kenya-Uganda and also on the Tanganyika Sections of the railway the stock is equipped with both air-operated and vacuum-operated brakes. The wagons are built for the metre gauge, but the wheels and axles are so designed that they can be altered to run on 3 ft. 6 in. gauge.

The principal dimensions and other particulars of the wagons are as follow:—

Gauge	...	...	Metre
Loaded weight	...	...	13 tons
Tare weight	...	...	7 tons 9 cwt.
Length over headstocks	...	...	20 ft.
Width inside body panels	...	...	8 ft.
Wheelbase	...	...	11 ft.

The wagons are of riveted construction and the underframe and body members are of B.S. rolled-steel sec-

tions. The lower body panels are of 4 lb. mild-steel plate, and the upper panels of ½ in. thick mild-steel plate. The door panels, of ½ in. (lower) and ¾ in. (upper) mild-steel plate, are made into pressings for stiffening purposes. Hinged double-doors and drop opening doors are provided; all door hinges are a drop stamping and are attached by welding.

The solebars are of 3 in. × 8 in. channels, and the outer longitudinals of 2½ in. × 2½ in. × ⅝ in. angles, secured to the solebars by mild-steel pressings. The underframe is further strengthened by inner longitudinals between the headstocks consisting of 3½ in. × 12 in. channels. The headstock pressings are of ½ in. mild-steel plate 1 ft. 11½ in. deep behind the central drawgear, to which is riveted a cast-steel buffer casing. The centre couplers are contained in a riveted box-like construction consisting of 3 in. × 9 in. channels and angles; safety chains are fitted at each end of the wagon.

The underframe is further strengthened by transverse members consisting of 3 in. × 8 in. channels which carry the brake hanger brackets and also brake gear equipment. The floor plates are ½ in. thick mild steel, and the body panels are riveted to 2 in. × 2 in. angles, except at the doors and ends which are 2½ in. × 2 in. and 2½ in. × 2½ in. angles respectively. The end panels are further reinforced by 4 in. × 2½ in. bulb angles also riveted to the headstock plates. Braking is applied through two blocks on each wheel.

The brake-shaft arms are welded to the brake shaft and a hand brake also is fitted. Solid rolled-steel wheels

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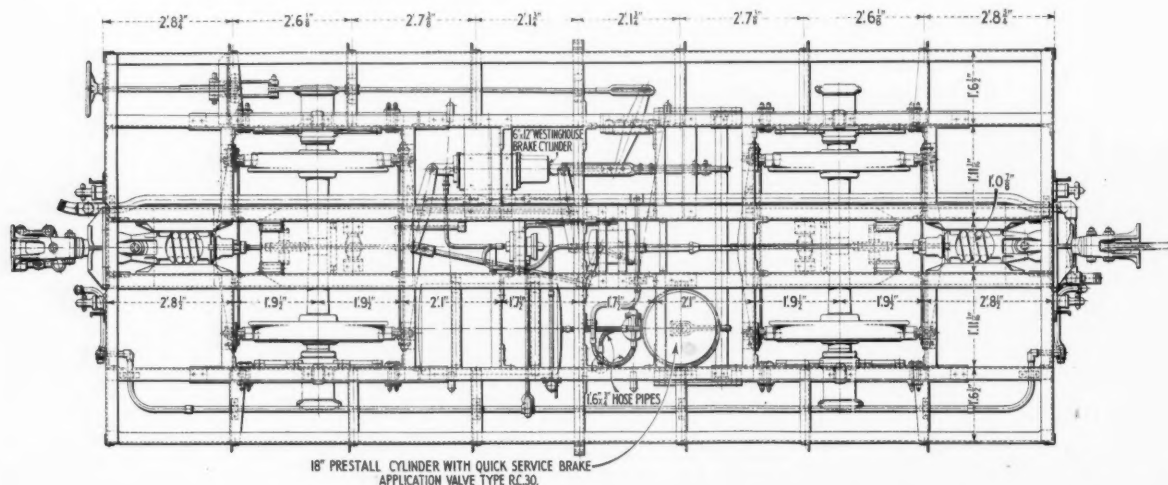


Diagram of the East African Railways & Harbours goods wagon underframe showing the arrangement of dual brake gear

Opening-Out a N.E. Region Tunnel

Cut-and-cover section of Brotherton Tunnel demolished and opened out to a cutting



New footbridge and portal to remaining portion of the tunnel seen from the cutting formed by the opening-out work

BECAUSE evidence of deterioration and of settlement of side walls had grown during recent years, tending to reduce the clearances, Brotherton Tunnel, N.E. Region, constructed in 1848 on the York-Sheffield main line, near Ferrybridge, has been opened out to a cutting.

The total length of the tunnel was approximately 320 yd. and at the north end carried the A.1 trunk road. Only 100 yd. at the north end of the tunnel had been driven through limestone, the remaining 220 yd. being of cut and cover construction with a covering of approximately 1 ft. 6 in. over the crown of the arch. The construction of this latter portion consisted of a brick arch, four rings thick, supported on side walls 4 ft. thick of fairly loose stone rubble backing, faced with masonry.

In 1912 a length of about 50 yd. of the side wall on the down side was rebuilt in brickwork on mass concrete footings. Inspection holes cut in the northern section of the tunnel showed a minimum of six rings of brickwork in the arch generally. The side walls, as in the remainder of the tunnel, consisted of dry rubble filling, masonry-faced, the thickness varying between 2 ft. and 3 ft. The clear span is 24 ft. 10 in. and the rise of the arch 7 ft.

Strutting from toe to toe at sleeper level had been carried out in the past at two points to seek to arrest the movement. Further movement developed in recent months and it was therefore decided to demolish the cut-and-cover section of 220 yd. and open out to a cutting, the necessary additional land

for this purpose having been purchased in 1924.

Disposal of Material

Permission was obtained from the owners of adjacent land to use it as a topping site for the earth spoil. The top soil was to be scraped off, laid aside, and re-spread over the filling on completion. It was further arranged for the material from the demolished arch and side walls to be used to fill an old wagonway which ran along one of

the boundaries of the adjacent land. It was estimated that the wagonway would accommodate all this material, so that no provision for removal of spoil away from immediately adjacent to the work would be involved in the opening out operation. The contract for carrying out this work was let to the firm of Leonard Fairclough, Adlington, Lancs., and arrangements were made for all traffic using the line to be diverted between Sunday, May 11, and Sunday, May 25.

Work began on the site on Thursday, April 24, with the scraping of the topsoil from the adjacent land, leaving the soil over the arch to be removed by dragline excavator. A small labour force began digging round and severing the roots of trees standing within the Executive's boundary over the southernmost 90 yd. of the tunnel; these trees had to be removed at an early stage of the work.

In view of the very limited time of complete occupation of the line, as much of the excavation as could safely be removed without affecting the stability of the tunnel was cleared during the two weeks prior to possession being taken. By use of draglines and scrapers, the excavation was carried down behind the side walls to the final level of the slope at that point, this being approximately 3 ft. above top of sleepers; and the slopes were trimmed back to a grade approximating to the final one, the spoil being tipped and spread over the aforementioned adjoining land, filling hollows and irregularities.

The plant engaged on this excavation, over a period of two weeks, operating between the hours of 6 a.m. and 9.30 p.m., was 3 dragline excavators (bucket



Demolition by explosives in progress. Trench in foreground along side walls of bore was excavated before occupation of tracks

capacities $1\frac{1}{2}$, $1\frac{1}{4}$ and $\frac{3}{4}$ cu. yd.) with attendant lorries; and 3 tractors with 6 cu. yd. scrapers. Some 17,00 cu. yd. of spoil was removed, tipped, and spread.

Demolition Procedure

By Saturday, May 10, all excavation which could be carried out with safety whilst traffic still operated, had been completed, leaving the tunnel arch and side walls bared and ready for demolition. The demolition of the tunnel was carried out by use of explosives, holes having been drilled at 4 ft. centres from inside the tunnel in the side walls, one line immediately below the arch springing and another line 3 ft. above cess level. Ashes were deposited on the tracks to rail level throughout the length of the tunnel to be cleared, to give protection to the chairs and sleepers from

Double-shift working of all mechanical plant proceeded throughout the two-weeks period of line occupation. Meanwhile the majority of the labour force was engaged in raking down and trimming the new side slopes after the excavators had removed as much as possible.

The brickwork from the arch, approximately 1,100 cu. yd., and masonry from the walls, approximately 2,500 cu. yd., together with approximately 1,400 cu. yd. of earthwork from behind the side walls was tipped into the old wagonway.

As soon as sufficient debris had been removed from the end of the length of tunnel being retained, construction of the new portal was begun. It included a reinforced concrete facing to the end of the existing arch brickwork. As centring had to be erected for the con-

south portal. The foundations for this were prepared during traffic running and completed in good time for the erection of the two outer spans on June 29 and of the centre span on July 13. The erection of the British Railways concrete post and wire boundary fence on the new boundary and the general cleaning up of the site were completed on July 22.

Strengthening the Tunnel

As inspection holes cut through the side wall had shown the backing to be very loose, confirmed by the evidence available during demolition, it was decided to strengthen the 100 yd. length of tunnel remaining by pressure grouting, the aim being to consolidate the side walls and arch, particularly around the springing.

Three rows of holes were drilled at 4 ft. centres, one row 4 ft. below springing line, one immediately below springing line, and one in the arch 3 ft. above the springing line. The drilling was carried out during the final week of line possession. Pressure grouting then proceeded during the normal running of traffic.

The mix used was generally one bag of cement to an equal quantity of sand, though for the lower holes in the southern half of the tunnel a mix of one bag of cement to $1\frac{1}{2}$ of sand was used. The pressure used was generally between 60 and 80 lb. per sq. in., but in some instances 100 lb. per sq. in. was used in the work.

Total number of mixes used to complete the work was 2,251 and the quantity of cement used 112½ tons. Grouting of the tunnel was completed on Sunday, July 6.

The whole of the work was directed and supervised by Mr. A. Dean, Civil Engineer, North Eastern Region, York.



Excavators clearing out the new cutting

the falling material, and also to provide for the working of an excavator with face shovel, loading into lorries at track level.

A complete section of brickwork and masonry in the arch and side walls was cut out to separate the length of tunnel to be demolished from that which was to remain. The blasting operations were not completely successful and a further series of holes was drilled to enable charges to be placed at 2-ft. centres. This gave more satisfactory results, although several portions of arch and walls were, in fact, removed with the buckets of the dragline excavators.

By the evening of Tuesday, May 13, two days after commencement, the brick arch and side walls of the tunnel had been demolished throughout the whole length, and clearing out the rubble began. For this work, the two larger excavators, equipped with draglines, worked from the top of the new side slopes and the smaller one, equipped with face shovel, operated at track level from the south end and proceeded clearing up behind the work of the draglines.

struction of this arch, it was essential for it to be completed during the period of complete occupation of lines. This work, together with the provision of artificial stone facing to the new pilasters and end wall returns, and the complete clearance of the running lines, was completed to schedule and the lines were restored for traffic operation as planned, at midnight on Sunday, May 25.

New Portal and Footbridge

Thereafter, the completion of the portal in artificial stone facing with concrete backing proceeded, and was completed on Sunday, July 6. The re-soiling of the field was carried out as soon as the excavation, spreading, and levelling were completed, and top soil for the cutting slopes was heaped along the top of the slopes ready for raking down and spreading. The tractors and scrapers were released from the site on May 30.

It was necessary to provide a new footbridge on the line of a public footpath which had crossed the tunnel approximately 75 yd. north of the old

Goods Wagons for East Africa

(Concluded from page 576)

2 ft. 9½ in. dia. and axles with 8 in. × 4½ in. journals are fitted with cast-steel axleboxes. The axle guards are of conventional design and are cut out from the solid. Dabeg slack adjuster equipment is provided. The following supplied materials and equipment for the new wagons:—

Axlebox oilers ...	Railway Shield & Oiler Co.
Axlebox bearings ...	J. Stone & Co. (Deptford) Ltd.
Springs ...	English Steel Corporation Ltd., and West Bromwich Spring Co. Ltd.
Door controllers ...	Monarch Controller Co. Ltd.
Couplers ...	A.B.C. Coupler & Engineering Co. Ltd.
Wheels and axles ...	Taylor Bros. & Co. Ltd.
Westinghouse brake and vacuum brake	Westinghouse Brake & Signal Co. Ltd.
Steel castings ...	Robert Hyde & Son Ltd.
Sections, plates and bars ...	Patent Shaft & Axletree Co. Ltd.
Sheets ...	Richard Thomas & Baldwins Limited, and Smith & McLean Limited
M.I. castings ...	Hale & Hale (Tipton) Limited
Iron castings ...	Pesce & Partners Limited
Brake piping and fittings ...	Stewarts and Lloyds Limited, and British Steam Specialities limited
Dabeg slack adjusters ...	Vacuum Brake Co. Ltd.

RAILWAY NEWS SECTION

PERSONAL

Major F. Dos Santos Pinto Teixeira, Director General, Mozambique Railway, Portuguese East Africa, has been appointed Superior Inspector of Railways & Harbours, Mozambique.

Mr. Marcel De Vos, Director General, Belgian National Light Railways, who, as recorded in our November 7 issue, has

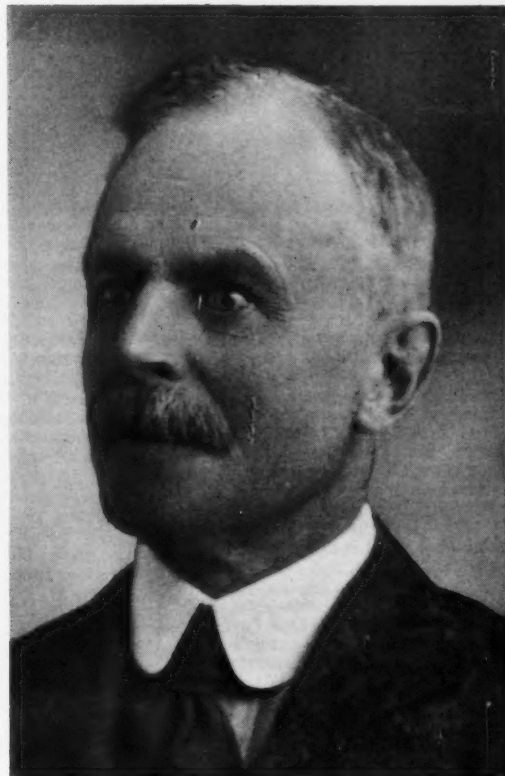
a Commander of the Order of the Crown and Officer of the Order of Leopold. He was in London in December, 1945, as government delegate to the Internal Transport Commission of the International Labour Office.

We regret to record the death of Mr. Taj Ud-Din Banday, Divisional Personnel Officer, Multan, North Western Railway, Pakistan.

and in 1890 qualified as a solicitor and returned to the Highland Railway. In 1891 he joined the Solicitor's Office of the North British Railway at Edinburgh, and two years later went to the North Eastern Railway as an Assistant in the Office of the Superintendent of the Line. Mr. Watson was sent to Glasgow to take over the work of the East Coast Superintendent for Scotland in 1895, so becoming the joint servant of the North Eastern and Great



Mr. Marcel De Vos
Appointed Director General of the
Belgian National Railways



The late Mr. H. A. Watson
General Superintendent, North Eastern Railway, 1902-22;
& General Superintendent, N.E. Area, L.N.E.R., 1923

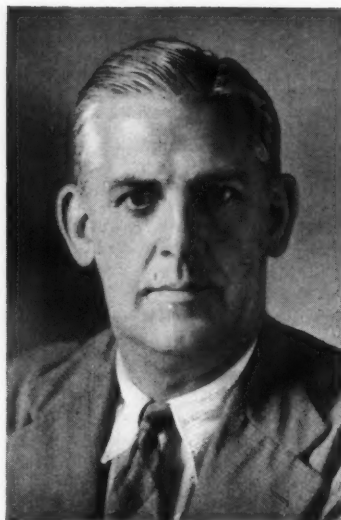
been appointed Director General, Belgian National Railways, was born in 1901 and graduated in engineering at Ghent University. In 1925 he entered the service, as an engineer, of the Telegraph & Telephone Administration, of which he became a Chief Engineer in 1936; he was promoted Chief Engineer & Director in 1938. During the war he was attached to the Office of Mr. Claeys, Secretary General to the Ministry of Communications, and he was transferred to that Ministry on March 31, 1945, as Inspector General at the Transport General Directorate. On July 1, 1945, he was nominated Government Member on the board of the National Light Railways, of which he became Director General in 1947; during this time he was appointed President of the provisional Brussels Transport Committee. Mr. De Vos is a member of the National Transport Regulating Office and of the board of the International Public Transport Union. He is

Mr. René Sergent has resigned from the board of the International Sleeping Car Share Trust.

The Eastern Region of British Railways announce the appointment of Mr. C. G. Reddington, District Engineer, Ipswich, as District Engineer, Kings Cross, in succession to Mr. J. R. Dallmeyer, who has been appointed Assistant Engineer (Works Maintenance), Eastern Region, Kings Cross.

We regret to record the death, on November 16, in his 90th year, of Mr. H. A. Watson, C.B.E., M.V.O., General Superintendent, North Eastern Railway, 1902-22, and afterwards General Superintendent, North Eastern Area, L.N.E.R., until his retirement in 1923. He joined the Solicitor's Office of the Highland Railway at Inverness in 1884, transferred to a lawyer's office at Edinburgh in 1889 to attend law-classes at Edinburgh University,

Northern Companies. He returned to York in 1896 and in 1898 became District Superintendent at Newcastle. He was appointed Assistant Superintendent of the Line in 1900, and shortly afterwards became Superintendent of the Line. In 1902 the Traffic Departments were reorganised as the result of a visit which Sir George Gibb paid to America in 1901, and Mr. Watson's duties were made to cover all traffic operation, both on the railway and the docks, and the post was designated General Superintendent. At the Grouping he became General Superintendent, N.E. Area, L.N.E.R., and he retired in December, 1923. In 1910 he became a Major in the Engineer & Railway Staff Corps. After retirement he acted as a railway consultant, and was also a Director of Charles Roberts & Co. Ltd. from 1932 until his death, and of the Derwent Valley Light Railway. He had also been Chairman of the Association of Minor Railway Companies.



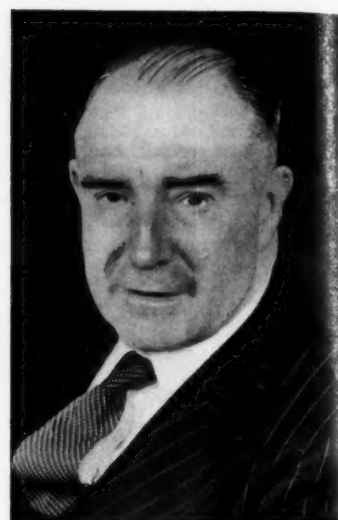
Mr. A. Johnston

Appointed Assistant Chief Engineer (Technical),
East African Railways & Harbours



Mr. Ernest Mathews

Stationmaster, Waterloo, Southern Region,
1946-52



Mr. L. J. Cox

Appointed Stationmaster, Waterloo
Southern Region

Mr. A. Johnston, M.I.C.E., Way & Works Engineer, East African Railways & Harbours, who, as recorded in our November 14 issue, has been appointed Assistant Chief Engineer (Technical), was educated at Robert Gordon's Technical College, Aberdeen. He joined the Kenya & Uganda Railways as Assistant Engineer in 1926, and was promoted to District Engineer in 1944, and to Senior District Engineer in 1946. In 1950 Mr. Johnston was appointed Way & Works Engineer, which position he has now vacated.

We regret to record the death on November 8, at the age of 58, of Professor H. A. Innis, the eminent Canadian political economist. Among his works on the social sciences were "A History of the Canadian Pacific Railway" (1923), "The Bias of Communication" and the Beit lectures at Oxford (1948), subsequently published under the title "Empire and Communications."

LONDON MIDLAND REGION STAFF CHANGES
The following staff changes are announced by British Railways, London Midland Region:—

Mr. J. S. S. Davies, Assistant Divisional Signal & Telecommunications Engineer, Derby, to be Divisional Signal & Telecommunications Engineer, Derby.

Mr. E. Lord, Assistant District Traffic Superintendent, Carlisle, to be District Traffic Superintendent, Carlisle.

Mr. H. A. Mugliston, Assistant District Traffic Superintendent (Commercial & Goods Operating), Chester, to be Shipping Traffic Superintendent, Belfast.

Mr. L. C. Purkess, Assistant (Extra), Commercial Superintendent's Office, Euston, to be Assistant to Commercial Superintendent (Passenger), Euston, Commercial Superintendent's Office.

Mr. H. Sheard, Head of Claims Section, Commercial Superintendent's Office, Euston, to be Assistant to Commercial Superintendent (Claims), Euston.

Mr. D. Fenton, Assistant District Operating Superintendent, Manchester (Eastern Area), to be Assistant District Operating Superintendent, Nottingham (Eastern Area).

Mr. Ernest Mathews, Stationmaster, Waterloo, Southern Region, who, as recorded in our October 31 issue, has retired, joined the L.S.W.R. in 1905 as a telegraph clerk at Eastleigh. After serving in the Stationmaster's Office there for some years, he was promoted in 1924 to be Chief Clerk in the Yardmaster's Office at Feltham marshalling yard. Two years later he went to Waterloo as Chief Timekeeper and subsequently became Assistant Stationmaster. Mr. Mathews was appointed Stationmaster at Clapham Junction in 1943 and at Waterloo in 1946.

Mr. L. Atherton has recently joined the Equipment Division of Mullard Limited, to take charge of the Special Products Commercial Group. Previously he was at the Ministry of Supply Atomic Energy Factory, Springfield, Preston.

We regret to record the death on November 12, at the age of 81, of Mr. S. B. Donkin, M.I.C.E., M.I.Mech.E., M.I.E.E., Senior Partner in the firm of Kennedy & Donkin, Consulting Engineers. He was President of the Institution of Civil Engineers in 1937-38.

Mr. G. F. d'Adhemar, Chief Traffic Manager, Eastern Bengal Railway, Pakistan, has been appointed Chief Commercial Manager, North Western Railway, and Mr. A. G. Khan, Chief Operating Superintendent, N.W.R., has been appointed Director of Traffic.

SOUTHERN REGION APPOINTMENTS
The following appointments are announced in the Southern Region of British Railways:—

Civil Engineer's Department

Mr. D. A. Harris, Engineering Assistant, Eastleigh, to be Assistant to District Engineer, Brighton, in place of Mr. W. H. Owen.

Mechanical & Electrical Engineer's Department

Mr. S. Spooner, Assistant for Substations & Control Rooms, London Bridge, to be Assistant Power Supply Engineer, London Bridge, in place of Mr. H. J. Morris, retired.

Mr. L. J. Cox, who, as recorded in our October 31 issue, has been appointed Stationmaster, Waterloo, Southern Region, entered the service of the South Eastern & Chatham Railway on August 16, 1916, as a Signal Lad at Redhill. After serving in various grades he was appointed in 1933 as Relief Signaller in the London West Division. In 1940 he became Traffic Controller at Reading, and in 1943 Trains Inspector, London West Divisional Superintendent's Office, Woking; he became Area Inspector in 1945. In 1947 he was appointed Assistant Stationmaster at Clapham Junction, moving to Bricklayers Arms as Assistant Agent in 1950, and thence Stationmaster at Portsmouth & Southsea and Fratton in July, 1950.

Mr. Charles E. Lee has been elected a Vice-President of the Newcomen Society. He is Associate Editor of *The Railway Gazette*.

Mr. L. Rumley, Sales Director of Conveyancer Fork Trucks Limited, left this country by air on November 15 for a tour of the African Continent, which will include visits to Kenya, the Rhodesias and the Union of South Africa. Mr. Rumley will survey the potential in these markets for the application of materials handling equipment. He will be returning to this country just before Christmas.

We regret to record the death on October 16 of Mr. William Powell, who was born in Cleveland, Ohio, in 1896, and for 26 years was employed in India on work connected with Indian railways. Later he was employed for three years on the Control Commission in Germany, engaged in the supervision of the dismantling of German factories. Two years ago he visited Tube Investments Limited, and was later appointed to the TI cycle factory in India. Early this year he came to England for a holiday and was due to return to India on November 4. On October 15 he visited Germany to inspect some machinery; on his way to Dusseldorf, on October 16, he was fatally injured in a road accident, and on October 20 was cremated in Dusseldorf.

Parliamentary Notes**Transport Bill Debate in House of Commons***Government case for decentralisation of transport and denationalisation of road haulage*

The two-day debate on the Transport Bill was opened in the House of Commons on November 17 by Mr. Alan Lennox-Boyd (Minister of Transport). Moving the Second Reading of the Bill, the Minister said that he was not ashamed that the Government had profited much by discussions and friendly arguments on transport in the last few months. There were many significant changes and he hoped to show that it was a better Bill than before. An immense contribution to the development of British Railways had been made by railway directors with their knowledge of insurance, finance, banking, shipping, industry and agriculture.

Mr. Lennox-Boyd said he had had talks this summer with railwaymen of varying grades and had never yet found anybody in a position of authority who did not regret the loss of that sort of help and contact. Fair examination of what had happened as the result of the 1947 Act must lead to the conclusion, that none of the integration problems that existed in 1938 or 1947 were nearer solution as the result of the Socialist Act. When the House was discussing the B.T.C. report in July the late Government had already abandoned any attempt to carry out an integrated area passenger transport scheme. He had pointed out that many local authorities, many of them Socialist-controlled, had opposed this scheme in their areas. It was true to say that his predecessor had decided to abolish the Road Passenger Executive and in Clause 16 of the Bill this intention was carried out.

This Bill was presented not only as the complete fulfilment of an election pledge, but also as a cardinal measure to help in the present economic difficulties. Competition gave a better service than a monopoly and that decentralisation was the best way to have a good service. Independent enterprise, or, in the case of the railways, Regional enterprise, was the best way to achieve that decentralisation.

Road would always have advantages over the railways, particularly where continual handling was concerned. The general user made up his mind on the basis of competitive charges, which in the view of the Government should be fair and based on real costs. Because he thought a large part of the Bill would achieve that purpose he was glad to commend it to the House. The form of decentralisation most appropriate to each of the two great sections of the transport industry was proposed in the Bill.

"I have been constantly urged," Mr. Lennox-Boyd continued, "that if the railways were freed from restrictions based on the days when they were virtually a monopoly and if management might be decentralised, they could have a reasonable chance of competing with road transport. If such a situation could be devised and enshrined in the Bill there would be no case for the operation of the second part of the levy, which has met with widespread opposition."

The Government had arranged in this Bill not only for the return to free enterprise of long-distance haulage but also for its disposal and for security for those

who purchased units, with the eventual removal at a fixed date of the 25-mile limit and a greater latitude in the issuing of "A" and "B" licences. It had also arranged for a wide measure of decentralisation for the railways, coupled with considerable improvements in their competitive position. He was taking powers in the Bill to control, if need be, the extent of the B.T.C. holding in passenger activities, but for this he had to wait to see what the committee presided over by Mr. Gerald Thesiger had to report about the working of the 1930 Act.

Railway Charges

Much the more important change in the Bill related to railway charges. In the chorus of approval and dissent about the Bill many newspapers and people had agreed with the improved opportunities for the railways with considerable enthusiasm. When the earlier Bill was introduced he and his colleagues did not feel that they had measured up to the difficulties of the railways in this sphere, nor to the new and tolerant view in the country to railway obligations, many of which were being swept away.

The clauses in the Bill relating to charges would be scrupulously examined in committee. The Government would listen to everything that was said during that examination, whether it was from coal traders, coastal shipping, or from other traders who were subject to unfair charges, or whether the criticism came, as it might, from those who believed that the new opportunities available for the railways should be granted before and not after the carrying out of the charges scheme.

Roads and Canals

Drawing attention to particular changes, Mr. Lennox-Boyd said that, first, under the 1947 Act the Commission had to produce a charges scheme also for their road haulage and canal activities. They were now relieved of that obligation in the new Bill, and they were on precisely the same footing in that field as road hauliers and other canal carriers. Under the 1947 Act the charges scheme could provide for either a fixed standard or a maximum charge; it now need provide only for a maximum rate, which meant that the commission's duty of going to the tribunal in advance, before they gave more than a 40 per cent reduction below the standard rate, for an exceptional rate, was removed by the Bill. Only maximum charges would have to be published; any railwayman would know that that represented a fundamental change. In the Bill relief was given to the railways from equality-of-charge obligations and undue preference obligations. They did not now have to have an agreed charge, only with Transport Tribunal prior approval, even if they could get the same results by offering an exceptional rate. In Clause 22, there was special procedure for a temporary authorisation of increase, along the lines of the original Bill, but adapted now to the new situation, where only maximum charges were to be published.

One of the more shortsighted acts of the Labour Administration, Mr. Lennox-Boyd went on, was the destruction of all the influence and guidance that could be given by railway boards to railway administration. In the course of his wanderings throughout the railway system, he had never yet met a railwayman of any grade who did not lament the disappearance of many of the particular features of his own line, or a single railway officer who did not regret that the Chief Regional Officer—the General Manager of olden days—had lost a good deal of his status. A functional system had been bad for the railways or Regions, and had led to an undue dependence on an inevitably large headquarters staff.

Decentralisation

Any detailed scheme of railway decentralisation must be prepared by railwaymen. The sort of principles the Government had in mind were a substantial measure of Regional or railway authority, sufficient to give a genuine reality to the railway's control over matters appropriate to Regional or railway responsibilities.

Central Responsibility

It should, however, be made quite plain what were the matters for central responsibility. For example, charges, wages, and standardisation of locomotives, which, he gladly recognised, had led to all sorts of good results. Central responsibility should be clearly defined. Over and above that, the bias should be in favour of the widest possible measure of Regional or railway responsibility, and the Government must concert with the B.T.C. to produce a framework to enable a detailed scheme to be worked out. Such a scheme would be debated in Parliament when produced. Meanwhile, in the ordinary day-to-day life of the railways, such reorganisation as they could undertake with their existing powers was a matter for their own responsibility.

The result of the new improved charges position for the railways, the Minister said, was that there was no longer any need for the second part of the road haulage levy. He had been advised that the levy would be admissible for deduction in calculating profits for income tax and profits tax and E.P.L. purposes.

Railway-owned Road Vehicles

It was proposed that the B.T.C. be allowed to retain a number of vehicles broadly approximating to the number owned by the railways before nationalisation and, in addition, to allow for what might have been the increase in the intervening years. That accounted for the phrase "six-fifths of the former holdings."

This would make the Commission the largest road haulage undertaking in the country, and would enable it to retain a substantial part of the Pickford Special Traffic Division.

Twenty-five Mile Limit

The proposals in the Bill as to lifting the 25-mile limit would not diminish transport resources and would not imperil the resources of the Commission. Making all allowances for the trade recession, the

increase in wages and other matters which all other industries had to bear, the figures unhappily did not suggest that the upward trend of last year was continuing.

Taking the "C" licence vehicles over 1½ tons, in December, 1948, there had been 268,000; in September, 1952, there had been 367,000, an increase of 37 per cent.

Assurance to B.R.S. Staff

The vast majority of road haulage workers, Mr. Lennox-Boyd added, would be given a chance of staying in an expanding industry. The Government would strengthen the security against the bad employer, and legislation as to wages and hours would be scrupulously observed. Compensation and pensions would be paid to those entitled.

If it was said that the whole value of co-ordination and of grouping would be lost if the industry passed into the hands of a large number of smallish people, there was nothing whatever to stop the advantages of a clearing house organisation being available for the small hauliers, to make sure that they could have the advantages of return loads. He saw no reason, though it was a matter for the Disposals Board, why it should not make available, as clearing houses, to groups of private operators, facilities from some of the depots it would fall to the board to dispose of.

Case for Opposition

Mr. Herbert Morrison (Lewisham S.—Lab.), opposing the Bill, said that the Minister had stated that integration was no nearer than it was before the 1947 Act was passed; but there had not been time since then for the full effects of nationalisation to be felt, though much had been achieved in the integration of road services organisation and in road/rail co-ordination.

As to freedom in the revised Bill in the making of charges, the competitors of the railways, Mr. Morrison added, had the right to go to the Transport Tribunal to object to railway charges on the ground that they were uneconomic and therefore unfair competition. Why did the Minister not apply the same principle to road transport charges? Why could not the Transport Commission go to the tribunal or the licensing authority under the 1933 Act, as it could be amended, and object to the charges of commercial road hauliers on the ground of unfair competition?

London Transport Fares

If all this freedom was to be given to the railways, he wondered what Mr. Maclay, the former Minister, thought about it when he remembered the trouble he was caused through the Prime Minister arbitrarily, irresponsibly, mischievously, and probably illegally interfering with the charges of London Transport. It was the Prime Minister's own decision—he boasted of it in the newspapers—and got the poor Minister of Transport into such a mess that it broke him up and he had to resign.

The levy was an admission that, the B.T.C. having bought the road haulage undertakings on a certain basis and at a certain price, it was now, through a board, to be required to sell them at a lower price than the public paid.

Mr. Lennox-Boyd intervened to say that the whole purpose of Part I of the levy was that the public authority should not have to pay for any sale. Part I would recoup the Commission for the loss on the sale.

The R.H.E. Mr. Morrison continued, had met the situation and if only the

Minister would let it get on with the job it would get through in all respects. Under the Government scheme profitable routes would be catered for by private enterprise and unprofitable routes left for a public authority of some sort. The Opposition believed that the Bill was fundamentally a bad Bill.

Sir Ralph Glyn (Abingdon—C.), a former Director of the L.M.S.R., said he was very grateful for the concessions the Government had made to free railways from the antiquated restrictions from which they had suffered. It was unfortunate that the House was still talking in terms of road and rail instead of transport as a whole.

Plea for Inquiry

There should be some form of inquiry into the financial consequences. He could not conceive what the need was for violent hurry about the Bill.

The second reading of the Bill ought to be passed, but the Government should realise how important it was that the change-over caused by the Bill should be smoothly carried out. There was a real danger of trying to sell off penny packets. Many of the large firms which might be willing to come back and buy vehicles would only do so if they had time to consider various matters about the use and condition of the vehicles, and so on. An inquiry should be held with industrialists, commercial people, and trade unionists, who should report within six months.

Since the Bill was presented there had been a tremendous reduction in the export of British cars and lorries. Who was going to buy second-hand vehicles?

An end must be put to transport being the plaything of party politics. Sir Ralph Glyn concluded. There was sufficient good will and knowledge, if party politics were eschewed, to put forward constructive suggestions.

Unfair Treatment of Railways

Mr. Alfred Barnes (East Ham S.—Lab.) on resumption of the debate on November 18, moved the rejection of the Bill. The forced sale of B.R.S., he said, would involve a loss of £20 million, and there was no case for repealing those sections of the 1947 Act which dealt with passenger road transport area schemes.

Since 1939, he went on, all Governments and all parties had failed to play the game with British railways. In the national interest their physical assets were exhausted to an extent that no other business had experienced and the Exchequer made a surplus of £190 million out of the railways during the war. After the railways had made a loss in 1947 there was still a surplus of £120 million which should have been given to the railways to cushion the effect of the post-war years. But the railways were left without sufficient wagons to carry the goods which the traders offered them and were not even permitted to keep their charges level with rising costs.

To throw 40,000 lorries on the market at this time at bargain prices, Mr. Barnes added, might push the automobile industry into further difficulties. Why should these lorries be sold at 75 per cent of their price? Much inefficient plant for which some compensation had to be paid, was scrapped by B.R.S., which had raised the whole standard in two years.

Mr. Gurney Braithwaite (Parliamentary Secretary to the Ministry of Transport) said that the B.T.C. as such would not be able to acquire transport units, as that would conflict with the obligation to dispose of the property now held by it for

the purposes of the R.H.E. There was nothing in the Bill to prevent the Commission obtaining an interest in a road haulage undertaking by the purchase of shares, and it could get sufficient shares to obtain control.

Mr. A. F. Holt (Bolton W.—L.) said the Liberal Party statement was one of the few constructive criticisms of the Bill. The Liberal Party would support the Bill on Second Reading, and with amendment it could be one of the most significant pieces of legislation of the century.

The motion for the rejection was negatived by 308 votes to 282—Government majority 26. The Bill was read a second time and committed to a committee of the whole House.

Financial Details

The House went into committee on the money resolution in connection with the Bill, Sir Charles MacAndrew, Chairman of Committee (Bute & North Ayrshire—C.), in the chair.

Mr. Lennox-Boyd said that the Bill, given its Second Reading by such a substantial majority imposed on the Exchequer no charges of great substance. The cost to Government departments of their proper contribution to the transport fund by way of the levy would be £112,000 a year. It was hoped that the successful sale of vehicles back to private enterprise would lead to a speedy termination of the need for the levy.

The second major financial consequence of the money resolution, he added, was that it might be necessary, during the early stages of the Transport Fund, for there to be a payment from the Treasury to the fund in order to meet any expenses to which the fund might be subjected before the actual levy was raised. The levy would be imposed on January 1, 1954, and repayments should be made early in 1954.

No change was contemplated in the licensing system for vehicles. The B.T.C. would pay the levy on vehicles in its hands. At the end of 1955 there would be a recalculation of the levy in the light of the position then existing.

If the nation was to have an efficient transport system, some temporary disturbance in the lives of some people might be inevitable. There would certainly be enough money for compensation when the levy came up for review in 1955, because £8 million would then have been paid into the transport fund by them.

The money resolution was agreed to by 296 votes to 270—Government majority, 26.

Severn and Forth Road Bridges

Mr. Gurney Braithwaite (Parliamentary Secretary to the Ministry of Transport) said in answer to questions on November 17 that construction work was unlikely to begin on the Severn and Forth road bridge schemes for some time to come.

Transport Development Plans

Mr. Alan Lennox-Boyd, in a written reply to a question on November 17 as to transport development plans, outlined the main recommendations of the London Plan Working Party report of 1949, which, he stated, was designed to fit in with the Greater London Plan, under which major highway works were contemplated. His reply also outlined the scope and recommendations of the Glasgow & District Transport Committee report of 1951.

Future highway proposals, he added, were included in development plans being

submitted under the Town & Country Planning Act, 1947, by local planning authorities.

Inland Waterways

Mr. Alan Lennox-Boyd stated in a written answer to a question as to Government policy on inland waterways that the B.T.C. had made notable progress in restoration of principal waterways to a condition in which craft using them could be loaded to capacity, and in 1951 tonnage carried exceeded 12 million originating tons for the first time since prewar. The Government was fully aware of the important rôle of the inland waterways and he was satisfied that the policy of the Commission, and of the Docks & Inland Waterways Executive, was directed to ensuring that the waterways were used to best advantage.

Merchandise Charges Scheme

Mr. Alan Lennox-Boyd wrote in answer to a question on November 17 as to the B.T.C. merchandise charges scheme and the effect of the delay in publication on South Wales ports that an extension of two years was allowed in July, 1949, and a further two years in August, 1951. The Commission could not submit draft charges schemes for merchandise by rail or for ports pending the decision of Parliament on the proposals in the Transport Bill affecting the basis of such schemes. Until a charges scheme was settled, it would not be possible to make fundamental changes in the existing rail rates to and from the ports or in port charges.

Steel Supplies

Mr. Duncan Sandys (Minister of Supply) stated in answer to a question on November 10 that in the six months from March to August, 1952, total steel supplies from all sources available for home consumption and exports were 8.49 million ingot tons against 8.36 million ingot tons in the corresponding period of 1951. Total supplies in 1952 should be rather above 18 million ingot tons. Although about 1,000,000 tons above the 1951 rate, it still fell short of present requirements.

Allocation of Steel

The steel allocation scheme, Mr. Sandys added, would be brought to an end immediately it ceased to be necessary; but it was still too early to say when that would be. There was still difficulty in obtaining sufficient quantities of certain types of steel, particularly plates for shipbuilding and boiler-making.

Nationalised Industries: Compensation

Mr. Winston Churchill on November 13 declined a suggestion by Mr. Emrys Hughes (S. Ayrshire—Lab.) that legislation be introduced to reduce the interest on stock issued in compensation to former shareholders of nationalised industries. There was, he said, a motion on the subject which he would be ready to deal with if it was successful in the ballot.

The motion reads: "That this House notes with approval the Prime Minister's statement that he was a very old supporter of the nationalisation of railways, welcomes his disapproval of the large sum paid in compensation to the shareholders, and urges him to follow this up by appointing a committee of inquiry to ascertain what measures can be taken for reducing

the compensation which is a heavy burden on the railways and other nationalised industries."

Fish Transport Charges

Mr. Henderson Stewart (Joint Under-Secretary of State for Scotland) on November 11, in reply to a suggestion by Lady Tweedsmuir (Aberdeen S.—C.), that, as the B.T.C. was about to ask for a 5 per cent increase in freight charges, which would bear heavily on Northern ports, he should press the Transport Tribunal to consider an extended scheme of tapering charges for carriage of fish, said that the Scottish Office was in close touch with the transport authorities. A flat rate for white fish was a matter for the White Fish Authority, which had decided not to impose it.

B.T.C. Charges Increase

Mr. Alan Lennox-Boyd, Minister of Transport, stated in the House of Commons on November 18 that when the B.T.C. applied for his authority to increase by 5 per cent its railway freight, dock and canal charges, he had sought the advice of the permanent members of the Transport Tribunal, acting as a Consultative Committee.

The Consultative Committee found that unless charges were increased, the Commission would incur a deficit of between £20 million and £22 million in a full year, and advised that immediate measures be taken to enable the Commission to obtain additional revenue of this order.

The Consultative Committee also said that an increase of 5 per cent in railway freight, dock and canal charges would produce about £12 million a year and a further £2½ million a year would be produced by a 5 per cent increase in road haulage rates which the Commission had power to make and which it would propose to make at the same time.

In its memorandum, the Commission had indicated that the whole question of passenger fares would be brought under review. Any increase in the maximum charges laid down in the charges scheme now in force would require the prior approval of the Transport Tribunal, while any increase in the fares charged by the bus companies owned by the Commission would require the prior approval of the Licensing Authorities concerned. The Consultative Committee did not, therefore, express any opinion as to the amount of additional revenue which might be obtained from these two sources, and had disregarded the possibility that the Commission might at some future date obtain further revenue from these sources.

The Consultative Committee, therefore, advised (a) that the only measures immediately available which would meet the position were an increase of 7½ per cent in railway freight, dock and canal charges, coupled with a similar and simultaneous increase in the Commission's road haulage rates; (b) that the additional revenue of £12 million a year which would be produced by an increase of 5 per cent in railway freight, dock and canal charges was the minimum contribution which could be required of these services.

The Minister said he had decided to adopt the figure for which the Commission had asked and to make regulations under Section 82 of the Transport Act authorising an increase of 5 per cent in the Commission's freight, dock and canal

charges, as from December 1, 1952. It would be open to the British Transport Commission to apply to the Transport Tribunal for an alteration of the existing Passenger Charges Scheme. The earliest date on which such applications could be made were March 2 next, in the case of London, and May 1 next in the case of railways outside of the London Area. These dates were in each case twelve months after the coming into force of the London and Provincial sections of the present Scheme.

New Fife Marshalling Yard

The Scottish Region announces that work is to start shortly on the preliminary stages of a new marshalling yard at Thornton, Fife, estimated to cost more than £750,000 and to take three years to complete. The scheme is being developed in co-operation with the National Coal Board.

This announcement gives some indication of extensive developments in the Fife coalfields. Before the war, Fife coal was shipped largely from Firth of Forth ports, whereas now it is being railed increasingly to Glasgow and other places in the west. Already major schemes for speedy handling of traffic have been inaugurated at Kelty and Oakley and the yard at Thornton, to be located near the new Rothes colliery now being sunk, will expedite the flow of coal to all parts of the country.

Strategic Position of Thornton

Thornton is the focal point of the principal portion of the Fife coalfields, both in relation to the collieries, mines, and open-cast sites grouped around it, and to the layout of main railway routes.

The existing yards handle not only coal but also goods traffic originating in or destined for the east of Fife. There are, however, no reception sidings independent of the running lines, no gravitational aids to shunting, and many of the sidings cannot accommodate a complete train. The facilities available are costly to operate, inadequate to meet the needs of the expanding coalfields, and incapable of being satisfactorily extended.

Location and Equipment

The new yard is to be sited to the west of the present sidings and will be located to the north of the Dunfermline to Thornton Junction main line between a point near Cluny Bridge over the River Ore approximately two miles east of Cardenden, and the Kinglassie Colliery branch line at Redford Junction.

The hump principle will be incorporated. With connecting lines to Rothes Colliery, the yard at the outset will have 20 sorting sidings with standage capacity of 60 wagons each, six reception sidings, six secondary sorting sidings, and the appropriate approach and departure roads, and shunting necks. At a later stage the number of sorting sidings will be increased to 35.

Provision is involved of an enlarged and modernised signalbox at Redford Junction, and of a new box at Cluny Bridge to control traffic to and from the marshalling yard in a westerly direction. The project also requires substitution of a new sewage plant for the existing sewage plant of the Strathore Hospital; excavation and tipping of some 340,000 cu. yd. of material to form embankment; and laying of some 27 miles of track.

European Goods Timetable Conference

Autumn session in London

The European Goods Timetable Conference began operations in 1927, so that the autumn, 1952, session, held in Great Britain for the first time since the inception of the Conference, marked a jubilee. Editorial reference to this meeting was made in our November 7 issue.

The Conference meets twice a year, in the spring and autumn, the latter session laying the foundation of timings and other alterations which are given final form and incorporated in the official *International Goods Train Timetable* at the spring session of the following year. For the European trading world its contribution to facilitating rail-borne commerce has been, and continues to be, invaluable, since the timetable issued by the managing administration (the Czechoslovak State Railways) is the only one catering for practically all European standard-gauge railway goods services which enter into international traffic.

With the complicated Continental railway network and the virtual impossibility of gathering from individual maps the most suitable combination of sections to form a through route between any particular pair of stations, where one or more frontiers have to be crossed, the Conference publication is extremely valuable. It is widely used on the Continent, particularly by international forwarding agents.

Of the Conference delegations this autumn, that from Germany was by far the largest since that system occupies a key position in inter-European rail-borne freight traffic. There were also present observers from the International Union of Railways and the Economic Commission for Europe. The British Railways delegation consisted of:—

Railway Executive: Mr. R. H. Hacker, Chief Officer (Continental).

E. & N.E. Regions: Messrs. L. H. K. Neil, Continental Traffic Manager; C. E. Keep, Traffic Assistant; G. Padgett, Sectional Chief; H. C. Talbot, General Agent for Belgium.

Southern Region: Messrs. R. E. Sinfield, Continental Superintendent; H. J. Bourn, Assistant Continental Superintendent; S. J. Grant, Freight Assistant; P. C. Durrant, General Agent for France; A. H. Bell, General Agent for Switzerland.

Many improvements in international connections were made during the discussions. Two major accelerations calling for special mention are the service between Italy and points in Scandinavia, and the service between Switzerland and Holland via Germany; there will be an improvement of 24 hr. in the latter so far as concerns the connection with the Hook of Holland night service to Harwich.

The Italy-Germany-Scandinavia services will be still further improved when the Grossenbrode-Gedser ferry can be worked to capacity, which is envisaged for 1954, and this will also improve through connections to and from Scandinavia by British Railways ferry services. Minor adjustments in the timings to and at the Italian frontiers will enable improvements to be effected in the already excellent connections with the British Railways ferries at Dunkirk. Other proposed accelerations which could not be scheduled for the 1953 timetable were a reflection of the present economic state of much of Europe, since the inability to effect them was due to the closing down of certain frontier stations

during the night hours on account of working costs.

International Routing Diagrams

The most valuable feature of the session was the discussion and final approval, with some amendments, of the results of the deliberations of a special committee held in Paris in June this year. This committee had been given the task of deciding a series of major international connections for goods traffic, to be based mainly in the first instance on operating convenience, but which, it was realised, would have to have its conclusions modified eventually where they clashed with economic considerations. Its findings were issued in the form of a series of diagrammatic routings, covering all the major streams of traffic throughout the European standard-gauge railways, and form an extremely useful "at-a-glance" guide. Its issue will greatly simplify the reading of the official timetable and will serve as a guide for the railways' commercial services.

Social features of the Conference included a rail trip to Bournemouth com-

bined with a motor-coach tour through the New Forest, and an official banquet in London.

Many of the delegates were visiting England for the first time and on the occasion of the Bournemouth and New Forest excursion were agreeably surprised at the beauties which an English countryside could show, even in the month of November.

Mr. David Blee, Commercial Member, Railway Executive, presided at the dinner. His speech to the delegates, translated for their benefit into French and German, was replied to by Monsieur Houska, President of the Conference, and Monsieur Bourdon, of the French National Railways, who thanked the Organising Committee for the excellent arrangements made on behalf of the delegates.

The Conference ended with a closing ceremony at Church House, on the morning of Saturday, November 8, presided over by Mr. L. H. K. Neil, Continental Traffic Manager, Eastern & North Eastern Regions, who congratulated the Managing Administration on the successful outcome of the deliberations.

The 1953 spring and autumn sessions will be held in Oslo and Cracow respectively, by invitation of the national railway administrations of Norway and Poland.

United Railways of the Havana Negotiations

Attempts to settle future of the system and obtain recognition of stockholders' interests

The fifty-fourth annual general meeting of United Railways of the Havana & Regla Warehouses Limited was held in London on November 11. Mr. W. R. Tomkinson, Acting Chairman, presiding in the absence, in Cuba, of Mr. R. G. Mills, Chairman.

Mr. Mills, in his statement, said that from the directors' report it would have been seen that once again they had no course other than to submit the accounts of the company made up from the unaudited Cuban accounts and the audited London accounts. The reported operational loss on working the railway during the year, according to the figures given by the Government interventor, amounted to £876,785. When they received these figures they found that £713,146 had been credited as a receipt from the Cuban Government. This credit, however, was not earned during the year under review, but represented dilatory payments in respect of the transportation debts incurred by the Government in past years. Therefore, it had not been shown in the operational section of the revenue account, but had been included in the last section of that account. Payment of these debts really amounted to the Government subsidising the railway.

Memorandum to New President

The statement then referred to the negotiations which they had had with a Commission appointed by the former Government. As soon as opportune after the present Government assumed power, the company's general manager obtained an interview with a member of the Government and handed to him a memorandum for presentation to the President. This memorandum demonstrated the treatment extended to the railway by past Governments and it detailed the steps taken by the Board to gain collaboration of the two

predecessors of the President in achieving a solution of the future of the railway, and obtain a just recognition of the interests of the British stockholders. The memorandum was passed on to the President, who appointed a Commission to report to him. This Commission summoned a meeting with representatives of the company, the Consolidated Railroads of Cuba and the National Association of Sugar Mill Owners, as those principally interested in the railway, to obtain their views on forming a scheme for submission to the President.

The Board was informed later that a decision had been taken at a meeting of the Cuban Cabinet to publish a notice in the Press inviting propositions for the purchase and rehabilitation of the railway. They made it clear to the Cuban Government that they had given no mandate to it to act as the company's agent either to invite bids or dispose of the company's properties, and the company's general manager was given a complete assurance by the Minister of Communications & Transport on behalf of the Cuban Government that the Government would acknowledge the company's position as owner of the railway.

On August 2, 1952, a Presidential Decree was published. It said that the Government had under consideration several plans, including that put forward by the special Commission of the World Bank, and it appointed a new commission with "full powers to act in the name and in representation of the Government in everything regarding the purchase, operation and reorganisation and sale, as the case may be, of the railway. . . ." In this respect the Decree acknowledged that approval of United Railways was essential to acceptance of any proposition.

At the time of preparing this statement (October 2) no information had been

received in London that any tenders had been submitted. Accordingly, another provision of the decree—"If none of the proposals is considered satisfactory, the Government shall proceed to clear the way for other solutions which shall fulfil the objectives as indicated in said notice"—should begin to operate.

The Board had no idea what the other solutions might be, but had deemed it desirable for Mr. Mills to go to Havana to ascertain at first hand the intentions of the Cuban Government and make any suggestions contributing towards a mutually satisfactory solution.

Mr. Mills hoped to return to this country in time to take the class meetings of holders of loan and share capital which would be held towards the end of November for the purpose of considering the scheme of arrangement for financial reorganisation. His movements had, however, necessarily to be governed by events in Cuba.

Mr. Tomkinson said that so far they had nothing to add to what had already been included in Mr. Mills's statement, except to say that Mr. Mills hoped to have an interview with President Batista at an early date. Every opportunity would be given to all concerned to study the proposed scheme of arrangement for financial reorganisation at the class meetings on November 27.

A meeting of holders of debentures and debenture stock of the subsidiary company, Havana Terminal Railroad, had passed an extra-ordinary resolution adopting the scheme, subject to its also being approved by the necessary meetings of United and sanctioned by the Court.

The report and accounts were unanimously adopted.

Contracts & Tenders

The following further contract has been placed by the Indian Government under its 1953 programme:—

Societe Anglo-Franco-Belge, La Croyère, Belgium: 80 "WG" class locomotives.

British Railways have placed an order with Maschinenfabrik Deutschland, Hamburg, for re-railing equipment. Further details are given on page 586.

The Turkish Government has recently placed the following contracts:—

Invest-Import, Belgrade, Yugoslavia: 350 goods wagons; 650 covered vans.

Siegner Eisenbahnbedarf A.G., Germany: 30 40-ton wagons, platform type, for carrying heavy vehicles.

Reference to the visit of a Turkish trade delegation to Yugoslavia was made in our October 10 issue, when it was announced that 1,000 wagons had been ordered.

British Railways, London Midland Region, announce that the following contracts have been placed:—

Tersons Limited, E.C.1: provision and removal of the temporary foot bridge, and repairs to the foot bridge (bridge No. 43), roofs, buildings, and so on at Harrow & Wealdstone Station.

Caffin & Co. Ltd., W.C.2: drainage and stabilisation of bank, up slow line, between mileposts 51m., 1,320 yd. and 51m. 1,570 yd. on the London-Rugby line at Wolverton.

Edward Wood & Sons Ltd., Derby: finishing to the new stores building at Derby Locomotive Works.

G. Duxbury & Sons, Leicester: construction of platelayers' cabins at various places in the Derby (South) Engineer's District.

Canadian Pacific Steamships has announced that, for the account of the Canadian Pacific Railway, an order has been placed with Fairfield Shipbuilding & Engineering Co. Ltd., Govan, Glasgow, for the construction of a passenger-cargo liner for the Liverpool-Canada service.

The vessel will be of 22,500 gross tons, with a service speed of 21 knots. It will carry 150 first class passengers and 900 tourist. There will be provision for about 5,000 tons of cargo, a substantial part of it refrigerated. The vessel is to be equipped with the Denny-Brown stabiliser. The keel is expected to be laid late next year and completion early in 1956 is anticipated.

The Board of Trade, Special Register Information Service, has recently reported a call for tenders issued by the State Railways of Thailand for the supply of 400 four-wheel all-steel low-side wagons for the metre gauge.

Tenders should reach the Office of the Stores Superintendent, State Railways of Thailand, Bangkok, by 2 p.m. on Tuesday, January 6, 1953. A copy of the tender documents together with the drawings is available for inspection at the Board of Trade, Commercial Relations & Exports Department, by representatives of United Kingdom manufacturers. A further copy of the tender documents only is available on loan in order of written application.

The United Kingdom Senior Trade Commissioner at Karachi has notified the Board of Trade, Commercial Relations & Exports Department, of a call for tenders issued by the Ministry of Communications (Railway Division), Government of Pakistan, for the supply of:—

10 metre-gauge bogie store delivery vans.

Three metre-gauge bogie luggage vans.

Tenders should reach the Office of the Director General, Railways, Karachi, by 12 noon on December 29, and must be

submitted on the appropriate forms, which can be obtained from the Director General. A copy of the tender documents and specifications (without drawings) is available for inspection at the Board of Trade by representatives of United Kingdom manufacturers until November 29; after this date it will be available on loan in order of written application.

NEW RAILWAY WAREHOUSE FACILITIES.—A prefabricated warehouse providing a floor space of 2,250 sq. ft. is nearing completion at Penzance Station, Western Region, and will shortly be available for occupation by traders. The provision of similar warehouses to meet the demands of traders has been planned by British Railways, and the building at Penzance is the first of 25 already scheduled for execution at various Western Region stations. Production of the prefabricated sections is being carried out by British Railways at the Exmouth Works.

INTERNATIONAL CONSULTATIVE COUNCIL OF TRAVEL AGENTS.—Representatives of national associations and organisations of travel agents in seventeen countries and two of the largest international travel agencies met in Paris on October 3 and unanimously agreed to establish an International Consultative Council of Travel Agents (I.C.C.T.A.). The object is to provide an international body which other bodies interested in various aspects of international travel can consult on matters which come within the scope of travel agents on an international plane. The widespread activities of those sponsoring the proposal and the personalities of the members, all with wide experience in travel matters, ensure that the Council speaks with authority. The Executive Member of Council will have his office at 10, Mayfair Place, London, W.1.

Asiatic Railway Officers' Visit



Mr. G. A. B. Leishman, Electric Traction Engineer (London Area), London Midland and Eastern Regions, explaining the work of the panel in conjunction with the diagram in Chadwell Heath control room to members of the E.C.A.F.E. mission during their tour of British Railways (see our November 7 issue)

Notes and News

Vacancy for Signal Engineer.—Applications are invited for the post of signal engineer, Pakistan Railway Service of Engineers, for three years in the first instance subject to renewal. Candidates should not be over 50 years of age. See Official Notices on page 587.

Crown Agents for the Colonies.—Applications are invited for the post of assistant accountant required by the Government of Sierra Leone for the railway department for two tours of 18 to 24 months, with the prospect of pensionable employment. See Official Notices on page 587.

Tribunal Report on U.T.A. Expected Soon.—The Leader of the Northern Ireland Senate, announced last week during the third stage of the Appropriation Bill that it was expected the report of the Transport Tribunal on the U.T.A. would be available at the end of this month.

British Railways Coal, Iron and Steel Carrying.—British Railways cleared 3,234,080 tons of coal from deep mined pits and opencast sites last week (up to 6 a.m. on November 17)—over 11,000 tons more than in the previous week. During the week ended November 8, 218,751 tons of iron and steel from the principal steel-works and 283,000 tons of iron ore were carried.

Riccall Accident: Crossing Keeper Convicted.—The crossing keeper at Riccall, near York, who as recorded in our September 12 issue was committed for trial on charges arising out of the level crossing accident on July 16, when the "Tees-Tyne Pullman" struck a car, killing its two occupants, has been found guilty at York Assizes of manslaughter and sentenced to nine months' imprisonment. Prosecuting counsel had suggested that a man might have entered the box to give the accused some cricket scores. The accused said in evidence that he momentarily forgot the express.

North Western Railway (Pakistan) Results, 1951-52.—Working results for 1951-52 of the North Western Railway (Pakistan) show a substantial surplus. Gross earnings for the year amount to about Rs. 29,65,00,000 and working expenses to Rs. 24,34,00,000. Allowing for interest charges on the capital outlay, Rs. 2,86,00,000, there is a surplus profit of Rs. 2,45,00,000. The operating ratio is about 82 per cent, compared with 74-89 last year; the rise is mainly attributable to higher wages and increased cost of fuel. These figures are subsequent to and should be substituted for those given in the article on this system in our publication, *Overseas Railways, 1952*.

New German Re-Railing Device to be Tried by British Railways.—British Railways have ordered from Maschinenfabrik Deutschland, Hamburg, re-railing equipment of a new type. The equipment is based broadly on the principle of the hydraulic motorcar jack. Giant hydraulic jacks raise the derailed locomotive, carriage or wagon to rail level; a crank and chain apparatus hauls the vehicle sideways into position and the jacks are then released so that the vehicle sinks back on to the rails. If the vehicle is overturned as well as derailed, it is first turned upright by means of link chains and hydraulic jacks. The largest of the jacks can lift a weight of 150 tons through a height of 18

in. Power for the jacks is provided by a self-contained diesel air compressor which is converted to a pressure in the hydraulic jacks of more than 4,000 lb. per sq. in. Work can be carried out without interruption to traffic on adjacent lines. If experience with the new equipment warrants, further sets may be built in British Railways workshops under licence.

London Midland Region Posters.—The poster reproduced below is one of a series in colour published recently by the London Midland Region. Among the subjects illustrated are Lancaster Castle, with the Judge's procession to the assizes and the armorial bearings of the county town. A poster advertising Northern Ireland issued in association with the Northern Ireland



One of a new series of travel posters issued by the London Midland Region

Tourist Board and the Ulster Tourist Association depicts the amphitheatre at the Giant's Causeway in County Antrim.

Liverpool Overhead Traffic.—An improvement in traffic was recorded on three out of four weeks during October by the Liverpool Overhead Railway. The greatest increase was by £178 to £2,728 during the week ended October 5 and on the aggregate receipts were £6,930 higher at £122,985 by October 26.

Pullman Car Company Results.—The net profit for the year ended September 30 of the Pullman Car Co. Ltd., was £63,758 (against £62,700 for the previous year) after providing for maintenance and depreciation £100,082 (£93,952) and tax £87,000 (£82,750). A final dividend of 8½ per cent (against 6½ per cent) is proposed on the "A" and "B" ordinary shares making 12½ per cent (10½ per cent) for the year requiring £18,703 (£15,711) leaving a balance to be carried forward of £120,848 (£82,293). Current assets total £542,000 (£508,000) and current liabilities £104,000 (£143,000). The annual general meeting will be held on December 16.

L.C.C. Objections to Transport Bill.—After examining the Transport Bill in its present form, the London County Coun-

cil has renewed the objections which it put forward to the Bill in its original form in July. Three recommendations submitted were: that no action should be taken which would lead to a diminution of the net revenue of the Transport Commission, and thus to the likelihood of fares in London being increased to a greater degree than in provincial centres of population; that exemption from the levy on goods vehicles should be granted to vehicles operated by local authorities; and that the provision in the Bill enabling passenger charges to be increased without prior reference to the Transport Tribunal was inequitable to Londoners and when operated might render nugatory any subsequent public hearing before the tribunal.

Railway Teams in Ambulance Competitions.—A Western Region team from Bristol, a women's finalist team representing British Railways and London Transport, and a women's finalist team representing national road passenger transport undertakings competed for the Grand Prior's Trophies of the St. John Ambulance Association at the Central Hall, Westminster, on November 18. Among those who attended the competitions were:—

Western Region: Messrs. Gilbert Matthews, Operating Superintendent; C. W. Powell, Assistant Operating Superintendent; K. C. Griffiths, Staff Assistant; and L. Edwards, District Operating Superintendent, Bristol.

London Transport: Messrs. John Cliff, Member; A. Bull, Chief Staff & Welfare Officer; and Alex. J. Webb, General Superintendent (Staff & Training—Railways).

British Productivity Council.—A British Productivity Council has recently been formally established and will be on a broader basis than its predecessor, the U.K. Section of the Anglo-American Council on Productivity, whose work it is taking over as well as engaging in fresh activities. In addition to representatives of the British Employers' Confederation, the Federation of British Industries and the Trades Union Congress, the Council includes representatives of the Association of British Chambers of Commerce, the National Union of Manufacturers and the nationalised industries. Among the members is Mr. John Benstead, Deputy Chairman, British Transport Commission.

G.W.R. Dramatic Society.—On Friday and Saturday last the Great Western Railway (London) Dramatic Society gave an excellent performance of Shaw's "Pygmalion" at the Fortune Theatre, London, W.C.2. Miss Joanne Wood is a gifted young actress who has given some outstanding performances for the society and was at her best in the role of Eliza Doolittle. Mr. Ronald Kench made an amusing Alfred. Henry Higgins and Colonel Pickering were admirably portrayed by Mr. Charles Moody and Mr. Charles Griffiths. Miss Dorothy Lees gave her usual polished performance as Mrs. Higgins. The principals were well supported by the rest of the cast. The whole performance was on a par with the high level of entertainment to which this Society has accustomed its audiences.

Driver Killed Replacing Weather Sheet.—Judgment for the Railway Executive has been given in an action for damages brought by the widow of the driver of a class "4" freight tender engine killed on a trip from Devons Road depot to Acton when his head struck an overline bridge as he was trying to replace the weather sheet. The Judge held that the sheet

OFFICIAL NOTICES

The engagement of persons answering Situations Vacant advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she, or the employment, is exempted from the provisions of the Notification of Vacancies Order, 1952.

RAILWAY DRAUGHTSMAN-SURVEYOR required by large firm of railway contractors. Applicants must have ability to carry out site surveys, plot same in layout form to good working scale (detailing for manufacture of turnouts, etc., done by other draughtsmen), capable of full use of theodolite and level, duties to include site supervision of contracts in progress, age 25-30 years, man with British Standard Specification experience preferred, conditions of employment to include provision of car, all travelling and general expenses, five-day week on rota system, comprehensive superannuation scheme, etc. Write in first place, stating age, experience and salary required.—Box No. 660, *Railway Gazette*, 33, Tothill Street, London, S.W.1.

CONSULTING ENGINEERS require Inspectors for Locomotives to be built at contractor's works, South Lancashire. Applicants must have served recognised apprenticeship British Railways or reputable firm locomotive builders and have had at least five years' subsequent experience locomotive manufacture or shop repairs, also experience in one of following branches—inspection, physical testing, welding or M.O.T. certificate. State age, experience and salary required to Box 692, c/o Dawson's, 129, Cannon Street, E.C.4.

strings were defective; the Railway Executive, in making no provision for a periodical inspection, had failed to exercise reasonable care in supplying equipment reasonably fit for use. The result was that the bottom of the sheet came into the cab. That did not create an acute emergency, but it was desirable it should be dealt with at once. The driver or fireman, said the Judge, could have done many other things, such as the fireman holding the sheet until they could pull up. From expert evidence it was clear that the driver's action invited disaster.

Institution of Electrical Engineers.—A paper on "Economic Aspects of Overhead Equipment for D.C. Railway Electrification," will be read before the Institution of Electrical Engineers, Savoy Place, W.C.2, by Mr. O. J. Crompton and Mr. G. A. Wallace, at 5.30 p.m. on Thursday, December 4.

Institute of Transport.—The Institute of Transport Henry Spurrier Memorial Lecture will be given at the Jarvis Hall (R.I.B.A.), 66, Portland Place, W.1, at 5.45 p.m. on Monday, December 8, when Mr. James Amos will read a paper on "The Operation and Economics of Passenger Road Transport."

British Railways Trying Out Mauzin Track Inspection Car.—The French National Railways have lent British Railways a Mauzin track inspection car of the type described and illustrated in our September 12 issue. In that article it was stated that the Mauzin car was among new track recording equipment being studied by British Railways. The vehicle records irregularities of track levels and pin-points their position on the line for subsequent correction. The vehicle arrived in this country on the Zeebrugge-Harwich Ferry, and will be used for some tests attached to ordinary passenger trains. The mechanism in the car is fitted with moving bands of paper on which pens, connected to the wheels, and to feelers touching the side of the rails, record imperfections of the track over which the car is passing. From its dimensions it would appear that the vehicle will find its greatest operating

CROWN AGENTS FOR THE COLONIES

ASSISTANT ACCOUNTANT required by the Government of Sierra Leone for the Railway Department for 2 tours, each of 18-24 months, with the prospect of pensionable employment. Commencing salary according to experience in scale £792 rising to £1,392 a year, including allowances. Outfit allowance £60. Quarters available at moderate rental. Free passages. Liberal leave on full salary. Candidates must have had at least 10 years' experience in the Accounts Department of a British or Colonial Railway. Applicants now serving with British Railways are eligible for secondment and should apply through their local officers. Apply at once by letter, stating age, full names in block letters, and full particulars of qualifications and experience, and mentioning this paper to the Crown Agents for the Colonies, 4, Millbank, London, S.W.1, quoting on letter M.33221.E. The Crown Agents cannot undertake to acknowledge all applications and will communicate only with applicants selected for further consideration.

ELECTRICAL ENGINEER, A.M. (S.A.) I.E.E., 38 years, English, now in S. Africa, experienced industrial power engineering and Stones train lighting systems, seeks change. Willing to travel anywhere.—Box 654, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

N.E.R. HISTORY.—Twenty-Five Years of the North Eastern Railway, 1898-1922. By R. Bell, C.B.E., Assistant General Manager, N.E.R. and L.N.E.R. Companies, 1922-1943. Full cloth. Cr. 8vo. 87 pages. 10s. 6d.—*The Railway Gazette*, 33, Tothill Street, London, S.W.1.

GOVERNMENT OF PAKISTAN

APPLICATIONS invited for the post of Signal Engineer, Pakistan Railway Service of Engineers: three years' contract in the first instance subject to renewal. Pay Rs. 1,400 per month less tax (approx. £1,700 net p.a.) plus £30 per month free of tax, overseas allowance, and free passages for non-Asiatics. Qualifications: Member of Institution of Railway Signal Engineers (England) or equivalent. At least 10 years' experience as Senior District Signal Engineer, or similar post. Full apprenticeship to Railway Company or Railway Signal Manufacturing Company. Experience in erection and installation of both Mechanical and Electrical Signalling Apparatus as "Relay Interlocking" and "Standard Power Signalling" and familiarity with selection and control circuit and Table, including electric locking. Age not over 50. Applications on the form to be obtained on request, should reach the HIGH COMMISSIONER FOR PAKISTAN, 35, Lowndes Square, London, S.W.1, by the 29th November, 1952.

DRAUGHTSMAN with experience in the preparation of engineering drawings for reproduction in technical journals required by London publishing house. Good lettering essential. Salary according to ability, 5-day week. Write, stating age, experience, and salary required.—Box 651, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

BOUND VOLUMES.—We can arrange for readers' copies to be bound in full cloth at a charge of 25s. per volume, post free. Send your copies to the SUBSCRIPTION DEPARTMENT, Tothill Press Limited, 33, Tothill Street, London, S.W.1.

range on the Western Region, which has a more liberal structure gauge than many other sections of British Railways. The use of the Matisa car outside France is in the hands of Matériel Industriel, S.A., Lausanne, of which Matisa Equipment Limited is the United Kingdom and Commonwealth associate.

Society of Engineers.—Mr. B. R. Byrne, of the Railway Executive Research Department, will read a paper on "The Fatigues of Metals; Facts and Theories Reviewed" before the Society of Engineers, on Monday, December 1. The meeting will be held in the apartments of the Geological Society, Burlington House, W., at 5.30 p.m.

London Midland Region Map Poster.—The London Midland Region has brought out a poster which shows all its lines in the Regional Colour. There are insets for the London, Liverpool and Manchester, Birmingham, and Nottingham districts. The lines of other Regions appear in blue, and the boundaries of the London Midland Region are thus easily traced. All stations are shown whether open for all traffic or for goods or parcels only.

Developing British Trade with Canada.—The Canadian Association of British Manufacturers and Agencies (CABMA) was formed with the support of the Dollar Exports Council, the Dollar Sterling Trade Council, the Association of British Chambers of Commerce, the Federation of British Industries, and the National Union of Manufacturers, to develop British trade with Canada. By arrangement with CABMA, Iliffe & Sons Ltd., and Kelly's Directories Limited, are jointly publishing in June, 1953, and thereafter annually, the first officially-sponsored directory of British manufacturers and exporters whose products and services are available in the Canadian market. The CABMA Register, as the volume will be called, will have six sections, and thousands of entries providing exhaustive references to the names, addresses, proprietary names and trade marks, products and services of British manufacturers and exporters actively engaged in trade with Canada. Six thousand copies of the first issue will be published,

the CABMA organisation undertaking the distribution of 3,000 copies against specially selected lists; the selling price for the balance will be £2 2s. The advertisement section is open to all British manufacturers and exporters whose products are sold in Canada through associate companies and agencies, or direct to buyers, and to Canadian organisations concerned with the furtherance of Canadian-U.K. trade. Advertisement details are obtainable from Iliffe & Sons Ltd., Dorset House, Stamford Street, London, S.E.1.

British Travel & Holidays Association.—The Duke of Edinburgh has consented to extend his Patronage to the British Travel & Holidays Association. The Association enjoyed the Patronage of the late King George VI.

"Get Together" Courses for Railway Staff.—A series of courses to enable railway staff of all grades to make contact and understand each other's problems and viewpoints is being held at Dillington House, a Somerset County Council residential adult education centre near Ilminster. Thirty-seven railwaymen from all Regions including clerks, signalmen, lengthmen, and foremen assembled at Ilminster on November 17 for a fortnight's lectures and discussions on subjects such as transport organisation, report writing, plan reading, staff matters, and simple economics. Lectures are kept to a minimum and students encouraged to take part in discussions. Work at a country station is studied at Ilminster, on the Taunton-Chard branch, with an opportunity at Taunton for students to see station working on a larger scale. The course will be followed by five similar courses, the last of which will be attended by female staff.

Chambers of Commerce Views on Transport Bill.—A letter to the Minister of Transport from Mr. A. R. Knowles, Secretary General of the Association of British Chambers of Commerce, has clarified the Association's attitude to the Transport Bill following Press reports of strong opposition. The letter states that the Chambers of Commerce as represented by the Asso-

ciation support the Government's aims of ultimately returning road haulage to private ownership and management, and at the same time granting to railways a wider degree of flexibility in their freight charges schemes. The creation of a State monopoly of long distance road haulage was, in the Association's view, a serious mistake. The Association considers that only by the re-introduction of the widest possible measure of private ownership and management into the industry can a really efficient, flexible and economical road haulage service be provided.

Transfer of Manchurian Line to Chinese.

—An agency message states that the transfer to Chinese ownership of the 1,000-mile Chanchung Railway from the Russian border to Port Arthur, arranged in the Moscow Chinese-Soviet Agreement last September, has begun. The transfer is being made under the direction of the newly-formed Chinese-Soviet Commission. Under the agreement it is to be completed by the end of this year. The railway, which runs from Lupin (Manchuli) near the Soviet-Manchurian border Topinkiang (Harbin) and then through Mukden to Dairen and Port Arthur, passes without payment to Chinese ownership under the Moscow Agreement. It has been under joint Soviet-Chinese management.

Forthcoming Meetings

- November 22 (Sat.).—British Railways, Southern Region, Lecture & Debating Society. Visit to London Airport.
- November 22 (Sat.).—Locomotive & Carriage Institution of Great Britain & Eire. Annual Dinner at the Lysbeth Hall, 10, Soho Square, W.1.
- November 25 (Tue.).—British Railways, Southern Region, Lecture & Debating Society, at the Chapter House, St. Thomas's Street, S.E.1, at 5.45 for 6 p.m. "Fawley Achievement," by Mr. A. G. Taylor.
- November 26 (Wed.).—Railway Students' Association. Annual Dinner & Dance, at the London Transport (South Kensington) Club. Reception by Mr. C. P. Hopkins, President, at 6.15 p.m., followed by dinner at 6.45 p.m.
- November 26 (Wed.).—St. Marylebone Society, at Marylebone Town Hall, at 8 p.m. "A Brief History of the Railways Serving the Borough of St. Marylebone," by Mr. George Dow.
- November 27 (Thu.).—British Railways, Western Region, London Lecture & Debating Society, in the Headquarters Staff Dining Club, Bishop's Bridge Road, Paddington, at 5.45 p.m. "What Mechanisation Means to the Civil Engineer's Department," by Mr. A. G. Ticehurst.
- November 29 (Sat.).—Railway Students' Association. Visit to London Brick Company, Clock House Brick Works, Capel, Surrey.
- November 29 (Sat.).—British Railways, Southern Region, Lecture & Debating Society. Visit to London Airport.
- December 1 (Mon.).—Institute of Transport, Metropolitan Section, at 80 Portland Place, W.1, at 5.30 for 6 p.m. Annual General Meeting, followed by "Decline and Fall of the London Tramways," by Mr. C. F. Klapper.
- December 1 (Mon.).—Society of Engineers, in the apartments of the Geological Society, Burlington House, W., at 5.30 p.m. "The Fatigue of Metals; Facts and Theories Reviewed," by Mr. B. R. Byrne.

Railway Stock Market

There has been a better tendency in stock markets and business was rather more active, particularly in British Funds with British Transport new 4 per cent stock at a premium of $\frac{1}{2}$, almost the best level since dealings started recently. Sentiment has been helped by a number of factors, particularly Mr. R. A. Butler's emphasis on the importance of lower taxation, which has led to widespread assumptions that a cut in income tax is probable in the next Budget. Moreover, a reduction in the bank rate is likely, which would provide a stimulus to investment and mean higher prices and a lower yield basis for gilt-edged stocks and fixed-interest securities generally.

Modifications to Australian import restrictions, and the widespread hopes that the Commonwealth Conference will make important decisions for expanding trade and building the sterling area gold and dollar reserves are factors tending to help sentiment in the industrial sections of markets. Although profits of most companies are running at lower levels than a year ago, the prevailing belief is that for the year now ending dividends generally will be maintained. Yields on this basis are attractive and industrial shares would respond strongly in price if there were a sustained rally in stock markets.

A revival in German, Japanese and other foreign bonds has overshadowed foreign rails, which, however, continued to attract a fair amount of attention and were not without active features.

Speculative activity has been maintained in White Pass & Yukon common shares, which showed small fluctuations around $\$19\frac{1}{2}$ with the 5 per cent convertible debentures at $\$71$. It will be a long while before earnings justify the current price of the shares, and there seems little likelihood of a take-over offer from U.S. interests. On the other hand the railway has big potentialities for the future, particularly if the Aluminium Company of America plan to build a refinery and hydro-electric plant materialises. Canadian Pacific changed hands around $\$58$.

United of Havana stocks have been firmer, though the 5 per cent 1906 debentures at 18 have lost an earlier rise. The $4\frac{1}{2}$ per cent Cuban debentures were 40, the $4\frac{1}{2}$ per cent Western debentures 20, and

Havana Terminal 5 per cent mortgage debentures changed hands around 70 $\frac{1}{2}$. In the City it is expected the capital reorganisation scheme will go through, though there are doubts whether there will be a take-over offer from Cuba in the form of a cash payment over a short period. It has been suggested it might take the form of a payment over a long period based on a percentage of Cuban sugar sales. Suggestions of this kind are mere conjecture. Stockholders can rest assured that the directors would not accept any offer unless it were fair and reasonable; and it would have to be approved by stockholders themselves.

Peruvian Corporation stocks have been steadier with the 6 per cent debentures 55 $\frac{1}{2}$, the preference stock 7 $\frac{1}{2}$ and the ordinary 2 $\frac{1}{2}$.

Elsewhere, Manila "A" debentures rallied to 74, but the preference shares kept at 8s. Antofagasta ordinary and preference were 11 and 53 respectively.

San Paulo 10s. ordinary units were 9s. 10 $\frac{1}{2}$ d., and Brazil Rail bonds 6 $\frac{1}{2}$. Dorada Railway ordinary stock spurted $\pounds 13$ to $\pounds 60$ on unconfirmed take-over rumours.

Guayaquil & Quito 5 per cent first mortgage bonds were 28 $\frac{1}{2}$, while Costa Rica Railway stocks remained firm with the ordinary 8, the $6\frac{1}{2}$ per cent first debentures 60 and the $6\frac{1}{2}$ per cent second debentures 40 $\frac{1}{2}$. International of Central America 5 per cent 60-year bonds have changed hands around 150.

There have again been signs of a little speculative interest in old Russian railway bonds; business at 7s. 6d. has been recorded in Black Sea-Kuban and also in Russian South Eastern.

Elsewhere, Nitrate Rails shares were 18s. and Taltal 14s. 6d. Mexican Central "A" debentures changed hands around 67.

Pullman Car "A" and "B" shares rose to 11s. 6d. and 3s. 6d. on the higher dividends.

Beyer Peacock showed firmness at 30s. 6d., Hurst Nelson were easier at 44s. 3d., North British Locomotive 13s. 10 $\frac{1}{2}$ d., Birmingham Carriage 32s., while Central Wagon have been firm up to 98s. and G. D. Peters 5s. shares changed hands around 17s. 4 $\frac{1}{2}$ d. Vulcan Foundry strengthened to 23s., Gloucester Wagon 10s. shares were 12s. 1 $\frac{1}{2}$ d., Charles Roberts 5s. shares 20s. 6d. and Wagon Repairs 5s. shares 12s. 9d.

Traffic Table of Overseas and Foreign Railways

	Railway	Miles open	Week, or month ended	Traffics for week		No. of week	Aggregate traffics to date			
				This year	Inc. or dec. compared with 1950/51		Total	Increase or decrease		
							1951/52			
South & Cen. America	Antofagasta ...	800	7.11.52	£ 122,580	—	£ 1,500	45	£ 6,895,000	+	£ 1,438,530
	Costa Rica ...	281	Sep., 1952	£1,207,759	+	£73,182	13	£4,064,027	+	£360,780
	Dorada ...	70	Aug., 1952	38,470	+	1,494	35	273,997	—	14,450
	Inter. Ctl. Amer.	794	Sep., 1952	\$909,367	—	\$20,744	39	\$9,797,041	—	\$169,447
	Paraguay Cent. ...	274	7.11.52	G663,153	+	G345,872	18	G11,351,340	+	G5,026,948
	Peru Corp. ...	1,050	Oct., 1952	\$9,097,000	+	\$716,000	18	\$37,947,020	+	\$5,049,000
	" (Bolivian Section)	66	Oct., 1952	Bs.18,674,000	+	Bs.350,000	18	Bs.66,080,000	+	Bs.6,361,000
	Salvador ...	100	Aug., 1952	c138,000	—	c3,000	9	c276,000	+	c10,000
	Taltal ...	122	Oct., 1952	\$3,106,000	+	\$1,467,000	18	\$11,644,000	+	\$3,701,000
	Canada	Canadian National†	23,473	Sep., 1952	19,197,000	+	1,551,000	39	167,187,000	+
Canadian Pacific†		17,037	Sep., 1952	13,024,000	+	1,034,000	39	113,083,000	+	8,082,000
Various	Barsi Light* ...	167	Oct., 1952	33,915	+	10,245	31	223,890	—	15,382
	Gold Coast ...	536	Sep., 1952	251,844	+	73,121	25	1,686,832	+	226,698
	Mid. of W. Australia ...	277	Aug., 1952	54,609	—	6,306	9	105,559	—	8,162
	South Africa ...	13,398	18.10.52	1,982,406	—	10,579	32	56,548,747	+	1,925,924
	Victoria ...	4,744	Aug., 1952	2,442,385	+	510,468	9	—	—	—

* Receipts are calculated at 1s. 6d. to the rupee

† Calculated at \$3 to £1